

2026

AHNO LOONG SERIES INDEXABLE TOOLS

阿诺 - Loong 龍系列 可转位刀具



AHNO 阿诺

Cutting Tool Technology



COMPANY INTRODUCTION

企业简介

阿诺成立于 2002 年 1 月，由德国工学博士柯亚仕创立，总部位于中新合作的苏州工业园区。阿诺作为金属切削刀具整体解决方案服务商，提供高品质精密金属切削刀具的设计研发、制造、修磨和技术支持等一条龙服务，具体产品有硬质合金钻头、可转位刀片、立铣刀、PCD 刀具、微小径刀具、医疗器械、刀具涂层、刀具修磨、刀具管理、提供项目加工的整体解决方案。

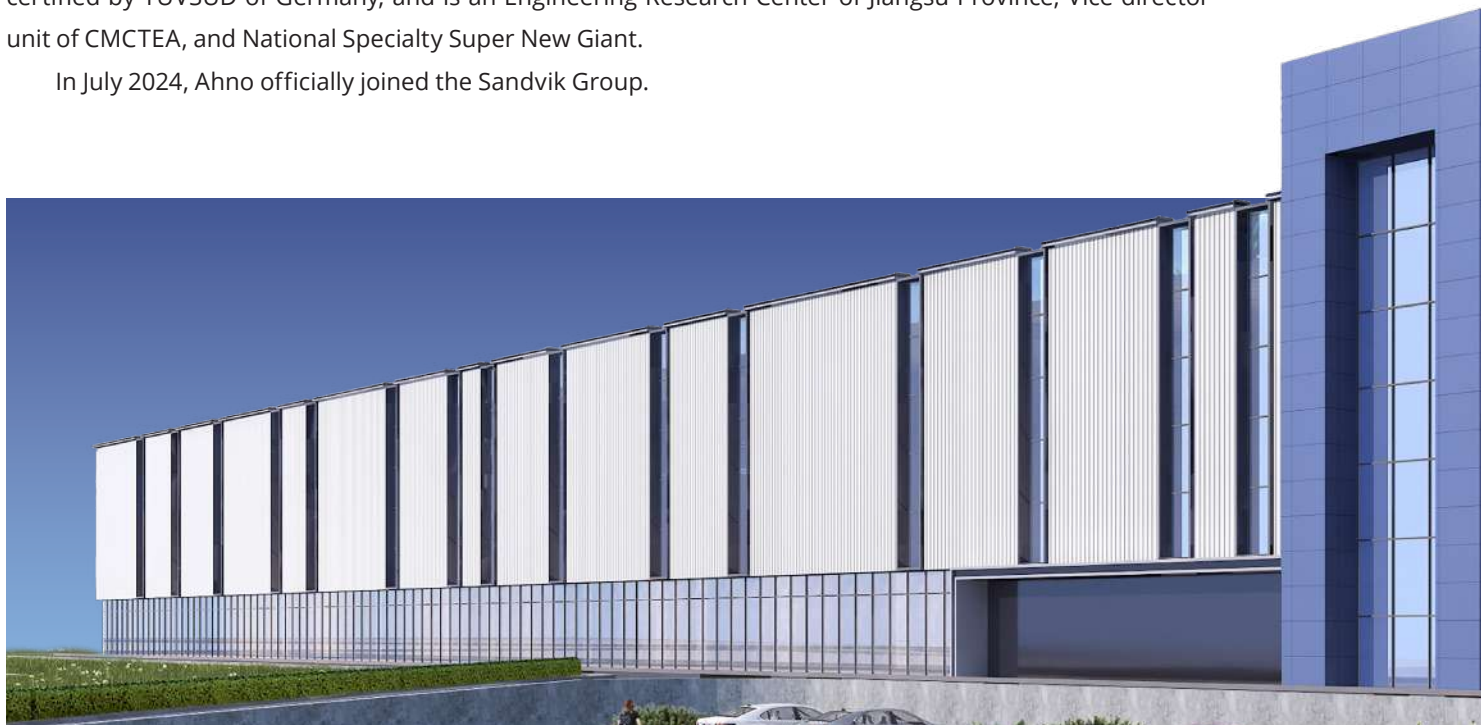
公司通过了由德国 TUVSUD 认证的 ISO9001 质量认证体系和 ISO13485 质量认证体系，常设江苏省工程研究中心，“中国刀协副理事长单位”，国家级专精特新“小巨人”。

2024 年 7 月，阿诺正式加入山特维克集团。

Ahno was founded in January 2002 by Dr. Ke Yashi and is headquartered in Suzhou Industrial Park, a Sino-Singapore cooperation area. Ahno, as an overall solution service provider of metal cutting tools, provides one-stop service in the design, development, manufacturing, regrinding and technical support of high-quality precision metal cutting tools. The specific products are solid carbide drills, indexable tools, end mills, PCD tools, micro tools, medical device, coating, regrinding, tool management, and overall solutions for projects.

The company has ISO9001 quality certification system and ISO13485 quality certification system certified by TUVSUD of Germany, and is an Engineering Research Center of Jiangsu Province, Vice director unit of CMCTEA, and National Specialty Super New Giant.

In July 2024, Ahno officially joined the Sandvik Group.



全国布局

National layout

6⁺家

全国工厂
National Factories

15⁺家

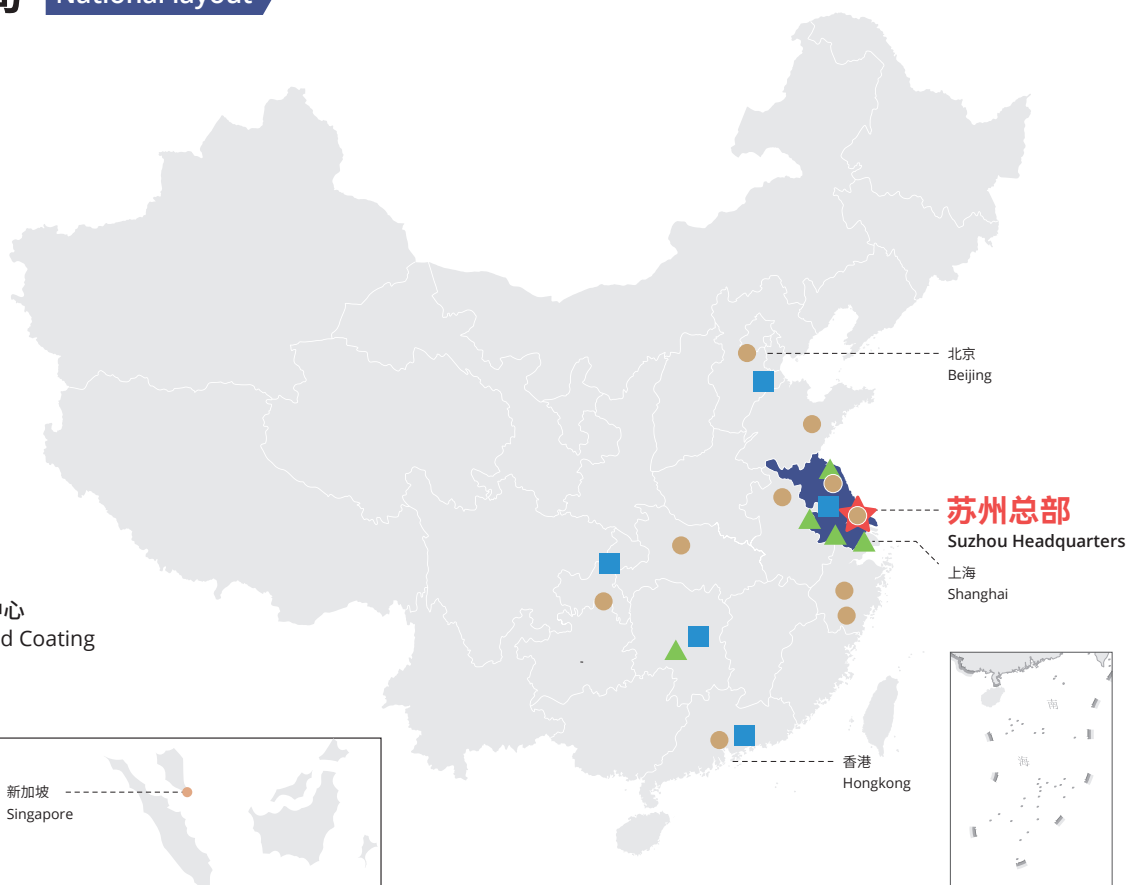
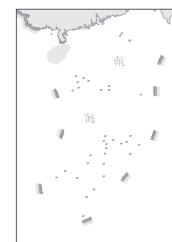
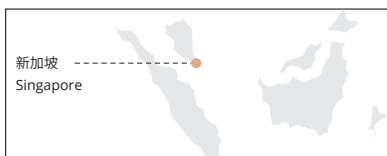
全国修磨、涂层服务中心
Nation Regrinding and Coating
Service Center

★ 总部
Headquarters

▲ 工厂
Factory

● 修磨中心
Regrinding Center

■ 涂层中心
Coating Center



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铣削系列 Milling Series

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TURNING SERIES

车削系列



车削用可转位刀片按照 ISO 1832 标准的符号说明

Turning Insert According to ISO1832 Code System

示例 1:

Example 1:

C	N	M	G	12	04	08	-	P	M	A
1	2	3	4	5	6	7		12	13	14

1、刀片形状

1. Insert shape

代号 Symbol	图形 Shape	代号 Symbol	图形 Shape
A		M	
B		O	
C		P	
D		R	
E		S	
H		T	
K		V	
L		W	

3、公差

3. Tolerance

允许公差 (mm) Permissible Deviation	d	m	s
	A	± 0,025	± 0,005
	C	± 0,025	± 0,013
	E	± 0,025	± 0,025
	F	± 0,013	± 0,005
	G	± 0,025	± 0,025
	H	± 0,013	± 0,013
	J ¹	± 0,05-0,15 ²	± 0,005
	K ¹	± 0,05-0,15 ²	± 0,013
	L ¹	± 0,05-0,15 ²	± 0,025
	M	± 0,05-0,15 ²	± 0,08-0,20 ²
	N	± 0,05-0,15 ²	± 0,08-0,20 ²
	U	± 0,08-0,25 ²	± 0,13-0,38 ²

¹ 刀片有精磨的副切削刃
Inserts with ground secondary cutting edges

² 视刀片尺寸而定 (见 ISO 1832 标准)
Depending on insert size ISO standard 1832

2、后角

2. Clearance Angle

代号 Symbol	图形 Shape	代号 Symbol	图形 Shape
A		N	
B		P	
C			
D			
E			
F			
G			

4、刀片加工和固定特征

4. Machining and Fastening Features

代号 Symbol	图形 Shape	代号 Symbol	图形 Shape	代号 Symbol	图形 Shape
A		H		R	
B		J		T	
C		M		U	
F		N		W	
G		Q		X	

需要可转位刀片的图纸
或准确说明
Drawing or precise description
of indexable insert required

示例 2:
Example 2:

C	C	G	T	06	02	04	E	L
1	2	3	4	5	6	7	8	9

5、切削刃长度

5. Cutting Edge Length

¹ 英制规格 (00) Inch

刀片形状 Insert Shape								
内切圆直径 d IC Diameter d								
mm	英寸	规格 Size	规格 Size	规格 Size	规格 Size	规格 Size	规格 Size	规格 Size
3,97	5/32					06		
5	0,197			05				03
5,56	7/32					09		
6	0,236			06				
6,35	2/8	06	07	06 ¹		11	11	04
8	0,315			08				05
9,525	3/8	09	11	09 ¹	09	16	16	06
10	0,394			10				
12	0,472			12				
12,7	4/8	12	15	12 ¹	12	22	22	08
15,875	5/8	16			15	27		10
16	0,63			16				
17,46	11/16							12
19,05	6/8	19		19 ¹	19			
20	0,787			20				
25	0,984			25				
25,4	8/8	25		25 ¹	25			
32	1,26			32				

6、刀片厚度

6. Insert Thickness

图形 Shape	厚度 s(mm) Thickness
	01 1,59
	T1 1,98
	02 2,38
	T2 2,78
	03 3,18
	T3 3,97
	04 4,76
	05 5,56
	06 6,35
	07 7,94
	09 9,52

7、圆角半径

7. Corner Radius

图形 Shape	半径 r(mm) Radius
	01 0,1
	02 0,2
	04 0,4
	08 0,8
	12 1,2
	16 1,6
	24 2,4
	M0 公制规格 (直径以 mm 单位) Metric (Diameter unit is mm)
	00 英制规格 (英制尺寸换算以 mm 单位) Inch (Inch converts to mm)

8、切削刃形状

8. Cutting Shape

代号 Symbol	图形 Shape
F	
E	
T	
S	

9、切削方向

9. Feed Direction

图形 Shape




硬质合金切削刀具材料符号说明

Carbide Insert Name Code

槽型索引
Chipbreaker Index

C

N

M

G

12

04

08

-

P

M

A

1

2

3

4

5

6

7

12

13

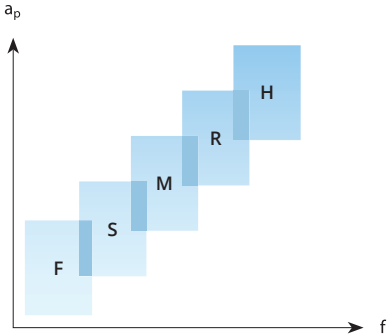
14

12、主要材料 12. Cutting Materials

代号 Symbol	材料 Material
P	钢 Steel
M	不锈钢 Stainless Steel
K	铸铁 Cast Iron
N	有色金属 Nonferrous Metals
S	难加工材料 Supper Alloy
H	硬材料 Hard Materials
U	通用 General

13、断屑区域 13. Chip Breaking Area

图表
Diagram



代号 Symbol	用途 Application
F	精加工 Finishing
S	半精加工 Semi Finishing
M	中等加工 Medium Machining
R	粗加工 Roughing
H	重切削 Heavy Roughing

14、应用推荐 14. Application

代号 Symbol	推荐 Recommendation
A	首选 1 st choice
B	次选 2 nd choice
X	断屑优先 Chip Breaking Recommended
W	Wiper 修光刀 Wiper Insert

示例：
Example :

A	C	P	10	A
1	2	3	4	5

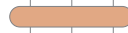
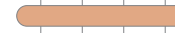
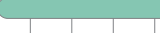
功能序号 Function No.	说明 Description	详情 Description			
1	AHNO 阿诺				
2	基础材料及 涂层代码 Basic Substrate and Coating Code	C	硬质合金 +CVD Carbide +CVD	V	金属陶瓷 +PVD Cermet +PVD
		P	硬质合金 +PVD Carbide +PVD	I	塞隆陶瓷 Sialon Ceramics
		B	CBN	W	晶须陶瓷 Whisker Ceramics
		D	PCD	N	硬质合金 Carbide
		T	金属陶瓷 Cermet		
3	第一推荐应用 First Recommended Application	P	钢 Steel	N	有色金属 Nonferrous Metals
		M	不锈钢 Stainless Steel	S	难加工材料 Supper Alloy
		K	铸铁 Cast Iron	H	硬材料 Hard Materials
4	ISO 应用范围 ISO Application Range	01 10 20 30 40 耐磨性 Wear Resistance 韧性 Toughness			
5	系列代码 Series Code				

阿诺 - Loong 龍系列车削材质一览

AHNO Loong Series-Turning Grade Overview

车削材料应用 Turning Materials Application																			
车削材质 Turning Grade	ISO 组别 ISO Group	涂层工艺 Coating Technology	工件材料组别 Workpiece Material Group						应用范围 Application Range										技术说明 Technology Description
			P	M	K	S	N	H	01	05	10	15	20	25	30	35	40		
ACP05A	P01~P15	CVD	●							■								高耐磨性的钢件车削材质，适用于精加工和半精加工，在系统刚性较好的场合能够应用于轻微断续加工。另外，也适用于部分铸铁和淬火材料的加工。 High-wear-resistant grade for ISO P in finish turning and semi-finish turning. Be appropriate for light interrupted cutting in a good rigidity system. Ductile iron and quenching materials are the additional applications.	
	K05~K20				◎					■									
	H10~H20							◎			■								
ACP10A	P05~P25	CVD	●							■							钢件车削的首选，出色的耐磨性和良好的韧性，是极具平衡性的通用材质。 The first choice for ISO P turning with excellent wear resistance and good toughness. A general balanced grade.		
	K05~K25				◎					■									
ACP20A	P15~P35	CVD	●								■						即使面对不利的加工条件，依然具有较高的可靠性，在钢件的连续车削或断续车削应用中，均能实现稳定加工。 With high reliability for ISO P turning even in unfavorable conditions. Stable performance in both continuous and interrupted applications.		
	K15~K35				◎					■									
ACP30A	P20~P40	CVD	●								■						针对恶劣加工条件的首选材质，凭借良好的基体韧性，广泛应用于强断续或重载车削，尤其是钢件或马氏体不锈钢的加工。 A grade with high toughness and excellent reliability for ISO P turning. Widely applied in heavy interrupted or heavy-duty turning. Particularly for steel and martensitic stainless-steel.		
	M15~M40			◎						■									
ACM20A	P15~P35	CVD	◎								■						不锈钢加工的通用材质，尤其是高线速度的切削应用，适用于连续或断续条件的半精加工至粗加工。 A general CVD grade for ISO M turning especially in high cutting speed applications. Appropriate for semi-finishing to roughing in continuous and interrupted conditions.		
	M10~M25			●						■									
	S10~S25					◎				■									
ACM30A	P20~P40	CVD	◎								■						不锈钢的粗加工材质，凭借良好的可靠性，在严重断续或重载车削领域有比较广泛的应用。 A CVD grade with high toughness and excellent reliability for ISO M turning. Widely applied in heavy interrupted or heavy-duty turning.		
	M20~M40			●						■									
	S15~S25					◎				■									
APS05A	M01~M10	PVD		◎					■								极细颗粒的低钴含量基体，搭载均匀且光滑的超薄物理涂层，实现了极致的耐磨性，是难加工材料的优选材质，亦可覆盖不锈钢和淬火材料、以及铸铁材料的精加工。 Low-cobalt substrate of fine grain with a special PVD coating. Excellent wear resistance for ISO S materials and also be appropriate for finish turning in stainless steel, quenching materials and ductile iron.		
	K05~K15				◎				■										
	S01~S10					●			■										
	H05~H15							◎	■										

阿诺 - Loong 龍系列车削材质一览
AHNO Loong Series-Turning Materials Overview

车削材料应用 Turning Materials Application																		
车削材质 Turning Grade	ISO 组别 ISO Group	涂层工艺 Coating Technology	工件材料组别 Workpiece Material Group						应用范围 Application Range								技术说明 Technology Description	
			P	M	K	S	N	H	01	05	10	15	20	25	30	35		40
 APS10A	M05~M20	PVD		●														难加工材料的专属材质，领先的 PVD 涂层技术能够有效地隔绝切削热量，特别适合于高温合金、钛合金等材料，覆盖了精加工至中等加工的切削范围。同样广泛应用于各类不锈钢的加工。 A dedicated grade for ISO S materials with advanced PVD coating which effectively blocks cutting heat, especially for heat-resistant alloys and titanium alloys, applications from finishing to medium turning. Also be appropriate for stainless steel machining.
	S05~S20					●												
	P05~P15		◎															
 APS20A	M10~M30	PVD		●														平衡性的基体搭载领先的 PVD 涂层，适用于难加工材料和不锈钢的半精加工至粗加工，在不利的加工条件下依然具有良好的可靠性。 A balanced substrate combined with advanced PVD coating. Appropriate for semi-finishing to roughing for both super alloys and stainless steels, excellent reliability even in unfavorable cutting conditions.
	S10~S30					●												
	P15~P25		◎															
 APU10A	M05~M20	PVD		●														车削加工的通用 PVD 材质，有效地平衡了耐磨性和韧性，适用于精加工至中等加工的切削领域，在钢、不锈钢、球铁等各类材料中均具有广泛的切削应用。 General PVD grade for turning, good balance with wear resistance and toughness. Suitable for finishing to medium machining, extensive applications in steel, stainless steel and ductile iron.
	K05~K25				●													
	N05~N25						●											
	H05~H15							●										
	P05~P20		◎															
	S05~S15		◎															

阿诺 - Loong 龍系列车削材质一览

AHNO Loong Series-Turning Grade Overview

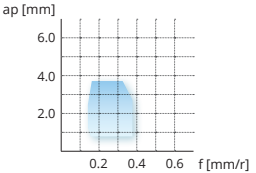
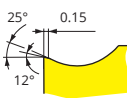
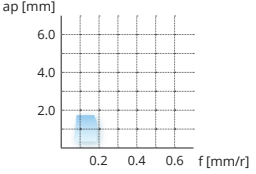
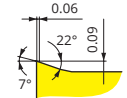
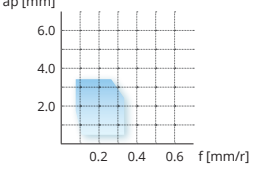
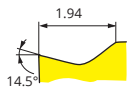
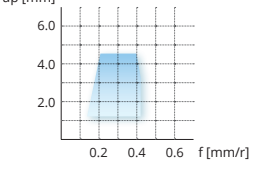
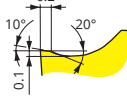
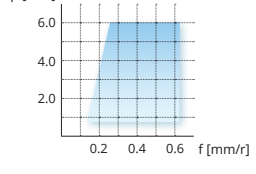
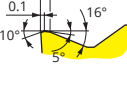
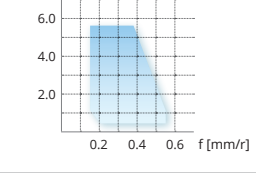
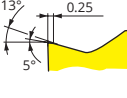
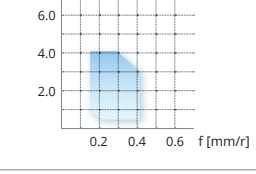
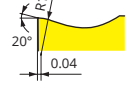
工件材料组 Workpiece Material Group		刀具材质 Tool Material	涂层类别 Coating	应用类别 Application					
				01	05	10	20	30	40
P	碳素钢 / 合金钢 Carbon Steel / Alloy Steel	硬质合金 Carbide	CVD	ACP05A					
		硬质合金 Carbide	CVD		ACP10A				
		硬质合金 Carbide	CVD				ACP20A		
		硬质合金 Carbide	CVD				ACP30A		
		硬质合金 Carbide	CVD				ACM20A		
		硬质合金 Carbide	CVD				ACM30A		
		硬质合金 Carbide	PVD		APS10A				
		硬质合金 Carbide	PVD				APS20A		
		硬质合金 Carbide	PVD		APU10A				
M	不锈钢 Stainless Steel	硬质合金 Carbide	CVD			ACM20A			
		硬质合金 Carbide	CVD				ACM30A		
		硬质合金 Carbide	CVD				ACP30A		
		硬质合金 Carbide	PVD	APS05A					
		硬质合金 Carbide	PVD		APS10A				
		硬质合金 Carbide	PVD			APS20A			
		硬质合金 Carbide	PVD						
		硬质合金 Carbide	PVD		APU10A				
K	铸铁 Cast Iron	硬质合金 Carbide	CVD		ACP05A				
		硬质合金 Carbide	CVD		ACP10A				
		硬质合金 Carbide	CVD				ACP20A		
		硬质合金 Carbide	PVD		APS05A				
		硬质合金 Carbide	PVD		APU10A				
N	铝合金 Aluminum Alloy	硬质合金 Carbide	PVD		APU10A				
S	高温合金 / 钛合金 High Temperature Alloy Titanium Alloy	硬质合金 Carbide	CVD			ACM20A			
		硬质合金 Carbide	CVD				ACM30A		
		硬质合金 Carbide	PVD	APS05A					
		硬质合金 Carbide	PVD		APS10A				
		硬质合金 Carbide	PVD			APS20A			
		硬质合金 Carbide	PVD		APU10A				
H	硬材料 Hard Materials	硬质合金 Carbide	CVD			ACP05A			
		硬质合金 Carbide	PVD		APS05A				
		硬质合金 Carbide	PVD		APU10A				



阿诺 - Loong 龍系列负型车削刀片槽型一览

AHNO Loong Series-Negative Turning Insert Chipbreaker Overview

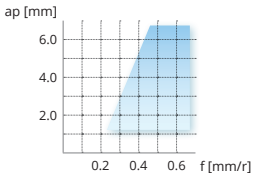
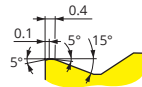
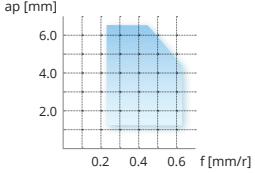
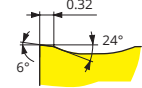
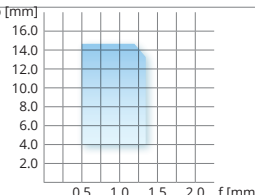
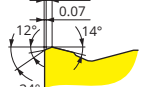
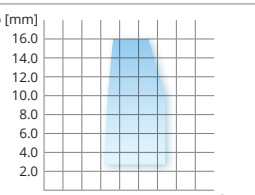
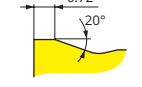
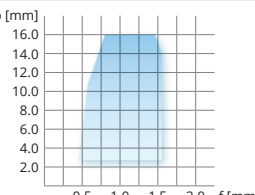
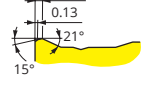
负型压制刀片
Negative Inserts

应用 Application	槽型 Type	断屑槽 Chipbreaker	断屑范围示意 Chipbreaker Range Diagram	断屑槽剖面 Chipbreaker Section	CN	DN	SN	TN	VN	WN
精加工槽型 Finishing	-PFA				CNMG-PFA	DNMG-PFA	SNMG-PFA	TNMG-PFA	VNMG-PFA	WNMG-PFA
										
					P.16	P.18	P.20	P.22	P.23	P.24
	-PFX				CNMG-PFX	DNMG-PFX		TNMG-PFX	VNMG-PFX	WNMG-PFX
										
					P.16	P.18		P.22	P.23	P.24
半精加工槽型 Semi Finishing	-MFA				CNMG-MFA	DNMG-MFA	SNMG-MFA	TNMG-MFA	VNMG-MFA	WNMG-MFA
										
					P.17	P.19	P.21	P.22	P.23	P.25
	-PSA				CNMG-PSA	DNMG-PSA	SNMG-PSA	TNMG-PSA	VNMG-PSA	WNMG-PSA
										
					P.16	P.18	P.20	P.22	P.23	P.24
中等加工槽型 Medium Machining	-PMA				CNMG-PMA	DNMG-PMA	SNMG-PMA	TNMG-PMA	VNMG-PMA	WNMG-PMA
										
					P.16	P.18	P.20	P.22	P.23	P.24
	-MMA				CNMG-MMA	DNMG-MMA	SNMG-MMA	TNMG-MMA	VNMG-MMA	WNMG-MMA
										
					P.17	P.19	P.21	P.22	P.23	P.25
	-MMB				CNMG-MMB	DNMG-MMB		TNMG-MMB	VNMG-MMB	WNMG-MMB
										
					P.17	P.19		P.22	P.23	P.25

阿诺 - Loong 龍系列负型车削刀片槽型一览

AHNO Loong Series-Negative Turning Insert Chipbreaker Overview

负型压制刀片
Negative Inserts

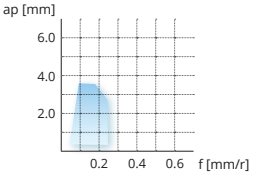
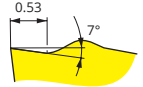
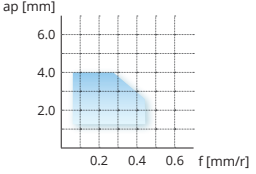
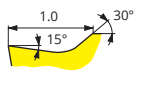
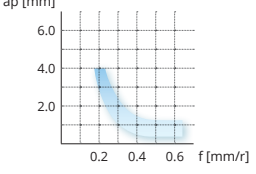
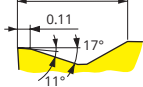
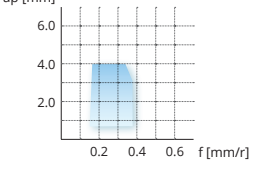
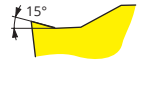
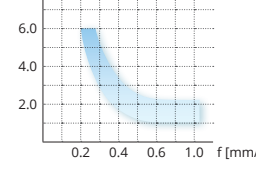
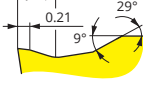
应用 Application	槽型 Type	断屑槽 Chipbreaker	断屑范围示意 Chipbreaker Range Diagram	断屑槽剖面 Chipbreaker Section	CN	DN	SN	TN	VN	WN
粗加工槽型 Roughing	-PRA				CNMG-PRA	DNMG-PRA	SNMG-PRA	TNMG-PRA		WNMG-PRA
										
					P.16	P.19	P.20	P.22		P.24
	-MRA				CNMG-MRA	DNMG-MRA	SNMG-MRA			WNMG-MRA
										
					P.17	P.19	P.21			P.25
重载加工槽型 Heavy-duty Roughing	-PHA				CNMM-PHA		SNMM-PHA			
										
					P.17		P.20			
	-PHB				CNMM-PHB		SNMM-PHB			
										
					P.17		P.20			
-UHA				CNMM-UHA		SNMM-UHA				
										
				P.17		P.20				

阿诺 - Loong 龍系列正型车削刀片槽型一览

AHNO Loong Series-Positive Turning Insert Chipbreaker Overview

正型压制刀片

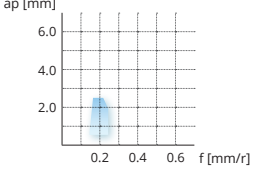
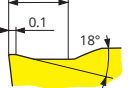
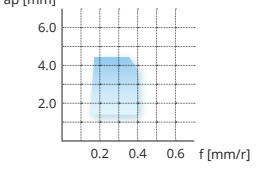
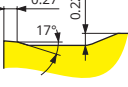
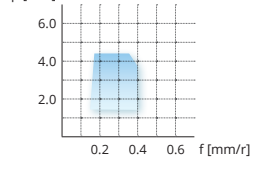
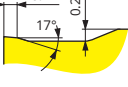
Positive Inserts

应用 Application	槽型 Type	断屑槽 Chipbreaker	断屑范围示意 Chipbreaker Range Diagram	断屑槽剖面 Chipbreaker Section	CC	DC	RC	SC	TC	VB/VC
精加工槽型 Finishing	-PFA				CCMT-PFA	DCMT-PFA		SCMT-PFA	TCMT-PFA	VBMT-PFA
										
	-UFA				CCMT-UFA	DCMT-UFA		SCMT-UFA	TCMT-UFA	VB/VCMT-UFA
										
	-UFA (RCMT)						RCMT-UFA			
										
半精加工槽型 Semi Finishing	-USA				CCMT-USA	DCMT-USA		SCMT-USA	TCMT-USA	VB/VCMT-USA
										
	-USA (RCMT)						RCMT-USA			
										

阿诺 - Loong 龍系列正型车削刀片槽型一览

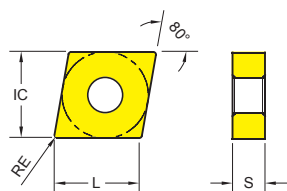
AHNO Loong Series-Positive Turning Insert Chipbreaker Overview

正型压制刀片
Positive Inserts

应用 Application	槽型 Type	断屑槽 Chipbreaker	断屑范围示意 Chipbreaker Range Diagram	断屑槽剖面 Chipbreaker Section	CC	DC	RC	SC	TC	VB/VC
应用 Medium Machining 中等加工槽型	-PMA				CCMT-PMA	DCMT-PMA		SCMT-PMA	TCMT-PMA	VBMT-PMA
					 P.26	 P.28		 P.30	 P.31	 P.32
应用 Roughing 粗加工槽型	-PRA				CCMT-PRA	DCMT-PRA		SCMT-PRA	TCMT-PRA	VBMT-PRA
					 P.26	 P.28		 P.30	 P.31	 P.32
	-URA				CCMT-URA	DCMT-URA		SCMT-URA	TCMT-URA	VBMT-URA
					 P.27	 P.28		 P.30	 P.31	 P.32

阿诺 - Loong 龍系列 - 负型 CN 刀片

AHNO Loong Series-Negative Insert CN
CNMG/CNMM (80° Negative)



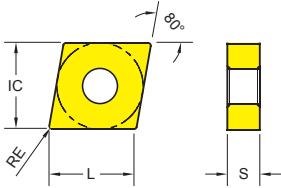
Series	L	IC	S
CN** 1204	12.9	12.7	4.76
CN** 1606	16.1	15.875	6.35
CN** 1906	19.3	19.05	6.35
CN**2509	25.8	25.4	9.52

					P					M					S			
CNMG/CNMM	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	New!					New!					New!			
					ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	AP505A	AP510A	AP520A	APU10A	AP505A	AP510A	AP520A
-PFA 	CNMG120404-PFA	0.4	0.15-0.30	0.4-3.0		●	●			○	○	●				●		
	CNMG120408-PFA	0.8	0.15-0.30	0.8-3.5		●	●			○	○	●				●		
	CNMG120412-PFA	1.2	0.15-0.35	1.2-4.0		○	○			○	○	○				○		
-PFX  新产品 New!	CNMG120404-PFX	0.4	0.06-0.15	0.3-1.5					●						●			
	CNMG120408-PFX	0.8	0.08-0.20	0.3-1.5					●							●		
-PSA 	CNMG120404-PSA	0.4	0.15-0.30	0.5-3.0	●	●	●			○	○							
	CNMG120408-PSA	0.8	0.15-0.45	0.8-3.0	●	●	●			○	○							
	CNMG120412-PSA	1.2	0.15-0.45	1.2-4.0		○	○			○								
-PMA 	CNMG120404-PMA	0.4	0.15-0.26	0.5-6.0	●	●	●	●										
	CNMG120408-PMA	0.8	0.17-0.52	0.8-6.0	●	●	●	●										
	CNMG120412-PMA	1.2	0.15-0.56	1.2-6.0	●	●	●	●										
	CNMG120416-PMA	1.6	0.17-0.80	1.6-6.0			●	●										
	CNMG160608-PMA	0.8	0.17-0.52	0.8-7.0	●	●	●	●										
	CNMG160612-PMA	1.2	0.17-0.60	1.2-7.0	●	●	●	●										
	CNMG160616-PMA	1.6	0.17-0.60	1.6-7.0			●	●										
	CNMG190608-PMA	0.8	0.17-0.52	0.8-8.0		●	●	●										
	CNMG190612-PMA	1.2	0.17-0.70	1.2-8.0	●	●	●	●										
-PRA 	CNMG120408-PRA	0.8	0.25-0.60	2.0-6.0	●	●	●	●										
	CNMG120412-PRA	1.2	0.25-0.68	2.0-6.0	●	●	●	●										
	CNMG120416-PRA	1.6	0.30-0.80	2.0-6.0				●										
	CNMG160608-PRA	0.8	0.25-0.60	3.0-7.0		●	●											
	CNMG160612-PRA	1.2	0.25-0.70	3.0-7.0	●	●	●	●										
	CNMG190612-PRA	1.2	0.25-0.70	3.0-8.0		●	●	●										
	CNMG190616-PRA	1.6	0.25-0.70	2.0-9.0	●	●	●	●										

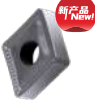
●: 标准库存产品 Standard stock products
○: 按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 负型 CN 刀片

AHNO Loong Series-Negative Insert CN
CNMG/CNMM (80° Negative)



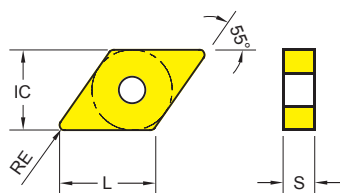
Series	L	IC	S
CN** 1204	12.9	12.7	4.76
CN** 1606	16.1	15.875	6.35
CN** 1906	19.3	19.05	6.35
CN**2509	25.8	25.4	9.52

					P					M					S			
					New!					New!					New!			
CNMG/CNMM	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A
-PHA	 CNMM190616-PHA	1.6	0.50-1.04	5.0-13.3			●	●										
	CNMM190624-PHA	2.4	0.50-1.40	5.0-13.3			●	●										
-PHB	 CNMM250924-PHB	2.4	0.70-1.40	3.0-16.0		●												
-UHA	 CNMM190616-UHA	1.6	0.40-1.00	2.0-12.0			●	●										
	CNMM190624-UHA	2.4	0.40-1.20	2.5-12.0			●	●										
-MFA	 CNMG120404-MFA	0.4	0.18-0.30	0.4-4.0		○	○	○		●	●	●				●		
	CNMG120408-MFA	0.8	0.20-0.45	0.8-4.0		○	○			●	●	●				●		
	CNMG120412-MFA	1.2	0.22-0.45	1.2-4.5						○		●				●		
-MMA	 CNMG120404-MMA	0.4	0.18-0.30	0.4-4.0		●	●			●	●	●				●		
	CNMG120408-MMA	0.8	0.20-0.45	0.8-4.0		●	●			●	●	●				●		
	CNMG120412-MMA	1.2	0.22-0.45	1.2-4.5		●	●			●	●	●				●		
	CNMG160608-MMA	0.8	0.22-0.50	0.8-5.0			●			●	●							
-MMB	 CNMG160612-MMA	1.2	0.25-0.55	1.2-5.5		●	●			●	●	●				●		
	 CNMG120404-MMB	0.4	0.16-0.25	0.5-4.0									●	●			●	●
-MRA	CNMG120408-MMB	0.8	0.18-0.40	0.6-5.0									●	●			●	●
	 CNMG120408-MRA	0.8	0.25-0.47	0.8-7.0		●					●	●						
	CNMG120412-MRA	1.2	0.28-0.63	1.2-7.0		●					●	●						
	CNMG120416-MRA	1.6	0.33-0.68	1.6-7.0		●					●	●						
	CNMG160608-MRA	0.8	0.30-0.47	0.8-8.0		●					●	●						
	CNMG160612-MRA	1.2	0.31-0.63	1.2-8.0		●				●	●							
	CNMG160616-MRA	1.6	0.33-0.72	1.6-8.0		●				●	●							

●: 标准库存产品 Standard stock products
○: 按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 负型 DN 刀片

AHNO Loong Series-Negative Insert DN
DNMG (55° Negative)

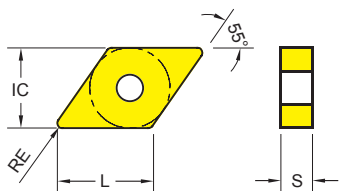


Series	L	IC	S
DN**1104	11.6	9.525	4.76
DN**1504	15.5	12.7	4.76
DN**1506	15.5	12.7	6.35

					P					M						S			
									New!					New!			New!		
DNMG	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	AP505A	AP510A	AP520A	APU10A	AP505A	AP510A	AP520A	
-PFA		DNMG110404-PFA	0.4	0.10-0.24	0.4-3.0		●	●			○	○	●				●		
		DNMG110408-PFA	0.8	0.15-0.30	0.8-3.0		●	●			○	○	●				●		
		DNMG150404-PFA	0.4	0.15-0.24	0.4-3.0		●	●			○	○	●				●		
		DNMG150408-PFA	0.8	0.15-0.30	0.8-3.0		●	●			○	○	●				●		
		DNMG150604-PFA	0.4	0.15-0.24	0.4-3.0		●	●			○	○	●				●		
		DNMG150608-PFA	0.8	0.15-0.30	0.8-3.0	●	●	●			○	○	●				●		
		DNMG150612-PFA	1.2	0.15-0.35	1.2-3.5			○					○				○		
-PFX		DNMG110404-PFX	0.4	0.06-0.15	0.3-1.5					●						●			
		DNMG110408-PFX	0.8	0.08-0.20	0.3-1.5					●							●		
		DNMG150404-PFX	0.4	0.06-0.15	0.3-1.5					●							●		
		DNMG150408-PFX	0.8	0.08-0.20	0.3-1.5					●							●		
		DNMG150604-PFX	0.4	0.06-0.15	0.3-1.5					●							●		
		DNMG150608-PFX	0.8	0.08-0.20	0.3-1.5					●							●		
-PSA		DNMG110404-PSA	0.4	0.15-0.24	0.5-3.0	●	●	●			○								
		DNMG110408-PSA	0.8	0.15-0.35	0.8-3.0	●	●	●			○								
		DNMG150404-PSA	0.4	0.15-0.25	0.5-3.0		●	●			○								
		DNMG150408-PSA	0.8	0.15-0.45	0.8-3.0		●	●			●								
		DNMG150604-PSA	0.4	0.15-0.25	0.5-3.0	●	●	●			○	●							
		DNMG150608-PSA	0.8	0.15-0.45	0.8-3.0	●	●	●	●		○	●							
		DNMG150612-PSA	1.2	0.15-0.45	1.2-3.0	●	●	○			○								
		DNMG150616-PSA	1.6	0.17-0.50	1.6-3.5		○	○											
-PMA		DNMG110404-PMA	0.4	0.15-0.26	0.5-3.0		●	●	○										
		DNMG110408-PMA	0.8	0.17-0.52	0.8-3.0		●	●	●										
		DNMG110412-PMA	1.2	0.15-0.56	1.2-3.0		●	●	○										
		DNMG150404-PMA	0.4	0.15-0.26	0.5-3.0		●	●	●										
		DNMG150408-PMA	0.8	0.17-0.52	0.8-4.5		●	●	●										
		DNMG150412-PMA	1.2	0.15-0.56	1.2-4.5		●	●											
		DNMG150604-PMA	0.4	0.15-0.26	0.5-3.0		●	●	●										
		DNMG150608-PMA	0.8	0.17-0.52	0.8-4.5	●	●	●	●										
		DNMG150612-PMA	1.2	0.15-0.56	1.2-4.5	●	●	●	●										

阿诺 - Loong 龍系列 - 负型 DN 刀片

AHNO Loong Series-Negative Insert DN
DNMG (55° Negative)



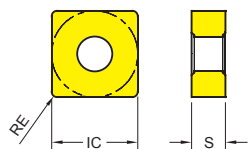
Series	L	IC	S
DN**1104	11.6	9.525	4.76
DN**1504	15.5	12.7	4.76
DN**1506	15.5	12.7	6.35

					P					M					S				
DNMG	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	New!					New!					New!				
					ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A	
-PRA		DNMG150608-PRA	0.8	0.25-0.48	2.0-4.5	●	●	●											
		DNMG150612-PRA	1.2	0.25-0.70	2.0-4.5	●	●	●											
		DNMG150616-PRA	1.6	0.30-0.80	2.0-4.5			●											
-MFA		DNMG110404-MFA	0.4	0.10-0.24	0.4-2.0		○	○			●		●				●		
		DNMG110408-MFA	0.8	0.15-0.27	0.8-2.0			○			●	●	●				●		
		DNMG150404-MFA	0.4	0.15-0.24	0.4-2.5			○					●				●		
		DNMG150408-MFA	0.8	0.15-0.30	0.8-3.0		○	○					●				●		
		DNMG150604-MFA	0.4	0.15-0.24	0.4-2.5		○	○			●	●	●				●		
		DNMG150608-MFA	0.8	0.15-0.30	0.8-3.0		○	○			●	●	●				●		
		DNMG150612-MFA	1.2	0.15-0.30	1.2-3.0		○				○		●				●		
-MMA		DNMG110404-MMA	0.4	0.15-0.24	0.4-3.0			●			●	●	●				●		
		DNMG110408-MMA	0.8	0.18-0.35	0.8-3.3			●			●	●	●				●		
		DNMG150404-MMA	0.4	0.15-0.24	0.4-3.5								●				●		
		DNMG150408-MMA	0.8	0.20-0.40	0.8-4.0								●				●		
		DNMG150604-MMA	0.4	0.18-0.24	0.4-3.5		●	●			●	●	●				●		
		DNMG150608-MMA	0.8	0.20-0.40	0.8-4.0		●	●			●	●	●				●		
		DNMG150612-MMA	1.2	0.22-0.40	1.2-4.0		●	●			●	●	●				●		
-MMB		DNMG150404-MMB	0.4	0.16-0.25	0.5-4.0									●	●			●	●
		DNMG150408-MMB	0.8	0.18-0.35	0.6-5.0									●	●			●	●
		DNMG150604-MMB	0.4	0.16-0.25	0.5-4.0									●	●			●	●
		DNMG150608-MMB	0.8	0.18-0.35	0.6-5.0									●	●			●	●
-MRA		DNMG150408-MRA	0.8	0.25-0.36	0.8-4.0		●				●	●							
		DNMG150604-MRA	0.4	0.17-0.18	0.4-4.0		●				●	●							
		DNMG150608-MRA	0.8	0.25-0.36	0.8-4.0		●				●	●							
		DNMG150612-MRA	1.2	0.26-0.54	1.2-4.0		●				●	●							

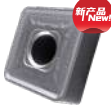
●: 标准库存产品 Standard stock products
○: 按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 负型 SN 刀片

AHNO Loong Series-Negative Insert SN
SNMG/SNMM (90° Negative)



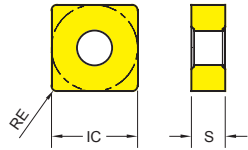
Series	L	IC	S
SN**1204	12.7	12.7	4.76
SN**1906	19.05	19.05	6.35
SN**2509	25.4	25.4	9.52

					P					M					S			
					New!					New!					New!			
SNMG/SNMM	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	AP505A	AP510A	AP520A	APU10A	AP505A	AP510A	AP520A
-PFA 	SNMG120404-PFA	0.4	0.15-0.30	0.4-3.0		●	●			○	○	●				●		
	SNMG120408-PFA	0.8	0.15-0.35	0.8-3.5		●	●			○	○	●				●		
-PSA 	SNMG120404-PSA	0.4	0.15-0.25	0.5-3.0		●	●			○								
	SNMG120408-PSA	0.8	0.15-0.45	0.8-3.0	●	●	●			○								
	SNMG120412-PSA	1.2	0.15-0.45	1.2-3.0		●	○											
	SNMG120416-PSA	1.6	0.15-0.45	1.6-5.0			○											
-PMA 	SNMG120408-PMA	0.8	0.17-0.52	0.8-6.0	●	●	●	●										
	SNMG120412-PMA	1.2	0.15-0.56	1.2-6.0		●	●	●										
	SNMG120416-PMA	1.6	0.17-0.80	1.6-6.0			●											
	SNMG190612-PMA	1.2	0.15-0.80	1.2-8.0		●	●	●										
	SNMG190616-PMA	1.6	0.17-0.80	1.6-8.0		●	●	●										
-PRA 	SNMG120408-PRA	0.8	0.25-0.60	2.0-6.0	●	●	●	●										
	SNMG120412-PRA	1.2	0.25-0.68	2.0-6.0	●		●	●										
	SNMG120416-PRA	1.6	0.30-0.80	2.0-6.0		●	●											
	SNMG190612-PRA	1.2	0.25-0.70	2.0-9.0	●	●	●											
	SNMG190616-PRA	1.6	0.30-0.80	2.0-9.0	●	●	●	●										
-PHA 	SNMM190616-PHA	1.6	0.50-0.88	5.0-13.3			●	●										
	SNMM190624-PHA	2.4	0.50-1.32	5.0-13.3			●	●										
	SNMM250924-PHA	2.4	0.50-1.32	5.0-14.0		●	●	●										
-PHB 	SNMM250924-PHB	2.4	0.70-1.32	3.0-16.0		●	●	●										
	SNMM250932-PHB	3.2	0.70-1.32	3.0-16.0			●											
-UHA 	SNMM190616-UHA	1.6	0.35-0.88	1.6-12			●	●										
	SNMM190624-UHA	2.4	0.40-1.20	2.5-12.0			●	●										
	SNMM250924-UHA	2.4	0.50-1.32	3.0-16.0			●	●										

●: 标准库存产品 Standard stock products
○: 按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 负型 SN 刀片

AHNO Loong Series-Negative Insert SN
SNMG/SNMM (90° Negative)



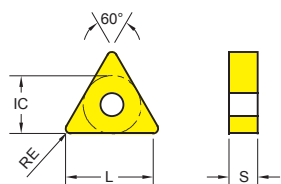
Series	L	IC	S
SN**1204	12.7	12.7	4.76
SN**1906	19.05	19.05	6.35
SN**2509	25.4	25.4	9.52

					P					M					S			
					New!					New!					New!			
SNMG/SNMM	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A
-MFA 	SNMG120404-MFA	0.4	0.15-0.30	0.4-3.0			○			●								
	SNMG120408-MFA	0.8	0.15-0.30	0.8-3.0			○			●	●	●					●	
	SNMG120412-MFA	1.2	0.15-0.35	1.2-3.0						○		●					●	
-MMA 	SNMG120408-MMA	0.8	0.20-0.45	0.8-4.5		●	●			●	●	●				●		
	SNMG120412-MMA	1.2	0.22-0.50	1.2-5.0		●	●			●	●							
-MRA 	SNMG120408-MRA	0.8	0.25-0.40	0.8-7.0		●				●	●							
	SNMG120412-MRA	1.2	0.28-0.59	1.2-7.0		●				●	●							

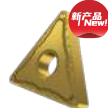
●: 标准库存产品 ○: 按订单生产
●: Standard stock products ○: Made-to-order

阿诺 - Loong 龍系列 - 负型 TN 刀片

AHNO Loong Series-Negative Insert TN
TNMG (60° Negative)



Series	L	IC	S
TN**1604	16.5	9.525	4.76

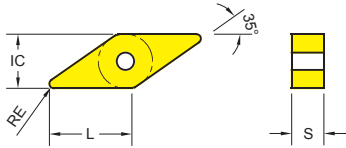
					P					M					S					
TNMG	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	New!	ACM20A	ACM30A	AP505A	New!	AP520A	APU10A	AP505A	New!	AP510A	AP520A	
-PFA		TNMG160404-PFA	0.4	0.15-0.24	0.4-3.0		●	●			○	○	●				●			
		TNMG160408-PFA	0.8	0.15-0.30	0.8-3.0		●	●			○	○	●				●			
-PFX		TNMG160404-PFX	0.4	0.06-0.15	0.3-1.5					●						●				
		TNMG160408-PFX	0.8	0.08-0.20	0.3-1.5					●						●				
-PSA		TNMG160404-PSA	0.4	0.15-0.25	0.5-3.0	●	●	●			●	●								
		TNMG160408-PSA	0.8	0.15-0.45	0.8-3.0	●	●	●			●	●								
		TNMG160412-PSA	1.2	0.15-0.45	1.2-3.0	●	●	○			○									
-PMA		TNMG160404-PMA	0.4	0.15-0.24	0.5-3.0		●	●	●											
		TNMG160408-PMA	0.8	0.17-0.52	0.8-5.0	●	●	●	●											
		TNMG160412-PMA	1.2	0.15-0.56	1.2-5.0		●	●	●											
-PRA		TNMG160408-PRA	0.8	0.25-0.48	0.8-5.3	●	●	●	●											
		TNMG160412-PRA	1.2	0.25-0.70	2.0-6.0	●	●	●	●											
-MFA		TNMG160404-MFA	0.4	0.18-0.24	0.4-2.5		○	○			●	●	●				●			
		TNMG160408-MFA	0.8	0.12-0.28	0.8-3.0		○	○			●	●	●				●			
		TNMG160412-MFA	1.2	0.15-0.28	1.2-3.0			○			○		●				●			
-MMA		TNMG160404-MMA	0.4	0.18-0.24	0.4-4.0		●	●			●	●	●				●			
		TNMG160408-MMA	0.8	0.20-0.40	0.8-4.0		●	●			●	●	●				●			
		TNMG160412-MMA	1.2	0.20-0.40	1.2-4.0			●			●	●	●				●			
-MMB		TNMG160404-MMB	0.4	0.16-0.25	0.5-4.0									●	●			●	●	
		TNMG160408-MMB	0.8	0.18-0.35	0.6-5.0									●	●			●	●	

●：标准库存产品 Standard stock products
○：按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 负型 VN 刀片

AHNO Loong Series-Negative Insert VN
VNMG (35° Negative)

Series	L	IC	S
VN**1604	16.5	9.525	4.76

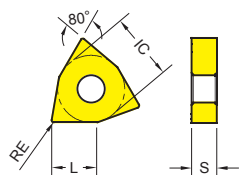


					P					M						S			
VNMG	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	New!					New!						New!			
					ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A	
-PFA		VNMG160404-PFA	0.4	0.15-0.20	0.4-2.5	●	●	●			○	○	●				●		
		VNMG160408-PFA	0.8	0.15-0.30	0.8-3.0		●	●			○	○	●				●		
-PFX		VNMG160404-PFX	0.4	0.06-0.15	0.3-1.5					●						●			
-PSA		VNMG160404-PSA	0.4	0.15-0.20	0.5-3.0	●	●	●			○								
		VNMG160408-PSA	0.8	0.15-0.35	0.8-3.0	●	●	●			○								
		VNMG160412-PSA	1.2	0.15-0.45	1.2-3.0		●	○			○								
-PMA		VNMG160404-PMA	0.4	0.05-0.20	0.8-3.0		●	●	●										
		VNMG160408-PMA	0.8	0.15-0.40	0.8-3.0	●	●	●	●										
		VNMG160412-PMA	1.2	0.15-0.56	1.2-3.0			●											
-MFA		VNMG160404-MFA	0.4	0.15-0.20	0.4-2.0		○	○			●		●				●		
		VNMG160408-MFA	0.8	0.12-0.25	0.8-2.5		○	○					●				●		
		VNMG160412-MFA	1.2	0.15-0.28	1.2-3.0						○		●				●		
-MMA		VNMG160404-MMA	0.4	0.15-0.20	0.4-3.0		●	●			●	●	●				●		
		VNMG160408-MMA	0.8	0.20-0.30	0.8-3.5		●	●			●		●				●		
		VNMG160412-MMA	1.2	0.22-0.40	1.2-3.5								●				●		
-MMB		VNMG160404-MMB	0.4	0.16-0.25	0.5-4.0									●	●		●	●	
		VNMG160408-MMB	0.8	0.18-0.35	0.6-4.0									●	●		●	●	

●: 标准库存产品 Standard stock products
○: 按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 负型 WN 刀片

AHNO Loong Series-Negative Insert WN
WNMG (80° Negative)



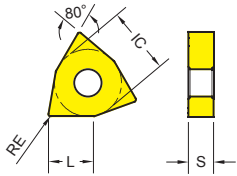
Series	L	IC	S
WN**06T3	6.5	9.525	3.97
WN**0604	6.5	9.525	4.76
WN**0804	8.69	12.7	4.76

					P					M						S		
					New!					New!						New!		
WNMG	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	AP505A	AP510A	AP520A	APU10A	AP505A	AP510A	AP520A
-PFA 	WNMG060404-PFA	0.4	0.15-0.30	0.4-3.0		●	●			○	○	●				●		
	WNMG060408-PFA	0.8	0.15-0.30	0.8-3.0		●	●			○		●				●		
	WNMG080404-PFA	0.4	0.15-0.30	0.4-3.0	●	●	●			○	○	●				●		
	WNMG080408-PFA	0.8	0.15-0.35	0.8-3.5		●	●			●	○	●				●		
	WNMG080412-PFA	1.2	0.15-0.35	0.8-3.5		○	○			○		○				○		
-PFX  新產品 New!	WNMG060404-PFX	0.4	0.06-0.15	0.3-1.5					●						●			
	WNMG080404-PFX	0.4	0.06-0.15	0.3-1.5					●						●			
	WNMG080408-PFX	0.8	0.08-0.20	0.3-1.5					●						●			
-PSA 	WNMG06T304-PSA	0.4	0.15-0.30	0.5-3.0			●			○								
	WNMG06T308-PSA	0.8	0.15-0.45	0.8-3.0			●											
	WNMG060404-PSA	0.4	0.15-0.30	0.5-3.0		●	●			○								
	WNMG060408-PSA	0.8	0.15-0.35	0.8-3.0		●	●			○								
	WNMG060412-PSA	1.2	0.15-0.45	1.2-3.0		●												
	WNMG080404-PSA	0.4	0.15-0.30	0.5-3.0	●	●	●			○	●							
	WNMG080408-PSA	0.8	0.15-0.45	0.8-3.0		●	●			●	○							
	WNMG080412-PSA	1.2	0.15-0.45	1.2-3.0	●	●				○	○							
-PMA 	WNMG060404-PMA	0.4	0.15-0.26	0.8-3.0		●	●	○										
	WNMG060408-PMA	0.8	0.17-0.52	0.8-4.0	●	●	●	●										
	WNMG080404-PMA	0.4	0.15-0.26	0.8-3.0		●	●	●										
	WNMG080408-PMA	0.8	0.17-0.52	0.8-5.6	●	●	●	●										
	WNMG080412-PMA	1.2	0.15-0.56	1.2-5.6	●	●	●	●										
-PRA 	WNMG080408-PRA	0.8	0.25-0.60	2.0-5.6	●	●	●	●										
	WNMG080412-PRA	1.2	0.25-0.68	2.0-5.6	●	●	●	●										

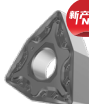
●：标准库存产品 Standard stock products
○：按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 负型 WN 刀片

AHNO Loong Series-Negative Insert WN
WNMG (80° Negative)



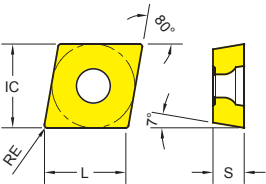
Series	L	IC	S
WN**06T3	6.5	9.525	3.97
WN**0604	6.5	9.525	4.76
WN**0804	8.69	12.7	4.76

					P					M						S		
					New!					New!						New!		
WNMG	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A
-MFA 	WNMG060404-MFA	0.4	0.15-0.28	0.4-2.5			○			●	●	●				●		
	WNMG060408-MFA	0.8	0.15-0.28	0.8-3.0		○	○				●	●				●		
	WNMG080404-MFA	0.4	0.10-0.30	0.4-2.7		○	○			●	●	●				●		
	WNMG080408-MFA	0.8	0.12-0.30	0.8-3.0		○	○			●	●	●				●		
	WNMG080412-MFA	1.2	0.15-0.30	1.2-3.0						○								
-MMA 	WNMG060404-MMA	0.4	0.18-0.30	0.4-3.0		●	●			●	●							
	WNMG060408-MMA	0.8	0.18-0.35	0.8-3.5			●			●	●	●				●		
	WNMG060412-MMA	1.2	0.20-0.40	1.2-4.0			●			●								
	WNMG080404-MMA	0.4	0.18-0.30	0.4-4.0		●	●			●	●	●				●		
	WNMG080408-MMA	0.8	0.20-0.45	0.8-4.0		●	●			●	●	●				●		
	WNMG080412-MMA	1.2	0.22-0.45	1.2-4.5		●	●			●	●	●				●		
-MMB 	WNMG060412-MMB	1.2	0.20-0.35	1.0-4.0									●	●			●	●
	WNMG080404-MMB	0.4	0.16-0.25	0.5-4.0									●	●			●	●
	WNMG080408-MMB	0.8	0.18-0.40	0.6-5.0													●	●
-MRA 	WNMG080404-MRA	0.4	0.17-0.23	0.4-4.0		●				●	●							
	WNMG080408-MRA	0.8	0.25-0.47	0.8-5.0		●				●	●							
	WNMG080412-MRA	1.2	0.28-0.63	1.2-5.0		●				●	●							

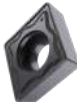
●: 标准库存产品 Standard stock products
○: 按订单生产 Made-to-order

阿诺 - Loong 龍系列 - 正型 CC 刀片

AHNO Loong Series-Positive Insert CC
CCGT/CCMT (80° Positive)

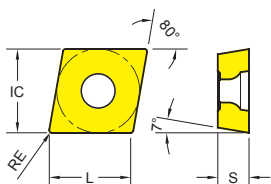


Series	L	IC	S
CC**0602	6.45	6.35	2.38
CC**09T3	9.67	9.525	3.97
CC**1204	12.9	12.7	4.76

					P					M					S			
CCGT/CCMT	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	New!					New!					New!			
					ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A
	CCGT09T302-PFA	0.2	0.04-0.15	0.2-2.5			●				●							
	CCMT060202-PFA	0.2	0.02-0.12	0.2-1.5		●	●				●							
	CCMT060204-PFA	0.4	0.05-0.20	0.3-2.5		●	●	●			●							
	CCMT09T304-PFA	0.4	0.06-0.24	0.3-3.0		●	●	●			●							
	CCMT09T308-PFA	0.8	0.08-0.28	0.6-3.0		●	●				●							
	CCMT09T304-PMA	0.4	0.04-0.25	0.4-3.0		●	●						●				●	
	CCMT09T308-PMA	0.8	0.10-0.35	0.8-4.0		●	●	●			●		●				●	
	CCMT120408-PMA	0.8	0.15-0.35	0.8-4.5		●	●	●			●							
	CCMT09T304-PRA	0.4	0.15-0.30	1.0-4.0		●	●											
	CCMT09T308-PRA	0.8	0.20-0.40	1.5-4.0		●	●	●										
	CCMT120408-PRA	0.8	0.20-0.40	1.5-4.5		●	●											
	CCMT120412-PRA	1.2	0.20-0.50	1.5-4.5		●	●	●										

阿诺 - Loong 龍系列 - 正型 CC 刀片

AHNO Loong Series-Positive Insert CC
CCGT/CCMT (80° Positive)



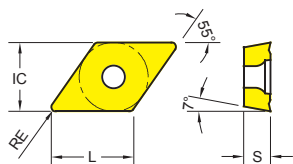
Series	L	IC	S
CC**0602	6.45	6.35	2.38
CC**09T3	9.67	9.525	3.97
CC**1204	12.9	12.7	4.76

					P					M					S			
									New!				New!				New!	
CCGT/CCMT	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A
-UFA 	CCMT060202-UFA	0.2	0.10-0.15	0.2-2.0		●	●			●	●							
	CCMT060204-UFA	0.4	0.15-0.26	0.4-2.0		●	●			●	●							
	CCMT060208-UFA	0.8	0.15-0.50	0.8-2.0		●	●			●								
	CCMT09T304-UFA	0.4	0.15-0.26	0.4-2.0	●	●	●			●	●							
	CCMT09T308-UFA	0.8	0.15-0.50	0.8-3.0	●	●	●			●	●							
	CCMT120404-UFA	0.4	0.15-0.26	0.4-3.0		●	●			●								
	CCMT120408-UFA	0.8	0.15-0.50	0.8-4.0		●	●			●	●							
	CCMT120412-UFA	1.2	0.15-0.50	1.2-4.0		●	●			●								
-USA 	CCMT060202-USA	0.2	0.10-0.15	0.2-1.0		●	●			●	●							
	CCMT060204-USA	0.4	0.12-0.18	0.3-1.5		●	●			●	●							
	CCMT060208-USA	0.8	0.15-0.30	0.5-2.0		●	●	●		●								
	CCMT09T302-USA	0.2	0.10-0.15	0.2-3.0		●	●			●	●							
	CCMT09T304-USA	0.4	0.15-0.26	0.3-3.0		●	●			●	●							
	CCMT09T308-USA	0.8	0.15-0.35	0.5-3.0		●	●			●	●							
	CCMT120404-USA	0.4	0.15-0.26	0.4-4.0		●	●			●	●							
	CCMT120408-USA	0.8	0.15-0.35	0.5-4.0		●	●			●	●							
	CCMT120412-USA	1.2	0.15-0.45	0.8-4.0			●											
-URA 	CCMT09T304-URA	0.4	0.15-0.30	1.0-4.0						●								
	CCMT09T308-URA	0.8	0.20-0.40	1.5-4.0						●								
	CCMT120408-URA	0.8	0.20-0.40	1.5-4.5						●								

阿诺 - Loong 龍系列 - 正型 DC 刀片

AHNO Loong Series-Positive Insert DC
DCGT/DCMT (55° Positive)

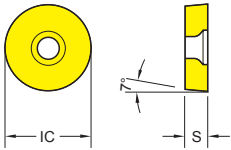
Series	L	IC	S
DC**0702	7.75	6.35	2.38
DC**11T3	11.63	9.525	3.97



					P					M					S			
DCGT/DCMT	型号 Type	RE	Fn (mm/rev.)	Ap (mm)														
					ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	AP505A	AP510A	AP520A	APU10A	AP505A	AP510A	AP520A
-PFA		DCGT11T302-PFA	0.2	0.02-0.15	0.2-2.5			●			●							
		DCMT070202-PFA	0.2	0.02-0.12	0.2-1.5			●			●							
		DCMT070204-PFA	0.4	0.05-0.20	0.3-2.0		●	●			●							
		DCMT070208-PFA	0.8	0.06-0.25	0.6-2.0		●	●			●							
		DCMT11T304-PFA	0.4	0.05-0.24	0.3-2.5		●	●	●		●							
		DCMT11T308-PFA	0.8	0.08-0.25	0.6-3.0		●	●			●							
-PMA		DCMT070204-PMA	0.4	0.04-0.24	0.2-2.1		●	●			●		●				●	
		DCMT11T304-PMA	0.4	0.04-0.28	0.2-2.8		●	●	●		●		●				●	
		DCMT11T308-PMA	0.8	0.10-0.30	0.6-2.8		●	●	●		●		●				●	
		DCMT11T312-PMA	1.2	0.12-0.30	1.0-2.8			●										
		DCMT150408-PMA	0.8	0.10-0.30	0.6-3.5		●											
-PRA		DCMT11T304-PRA	0.4	0.15-0.24	1.0-3.3		●	●										
		DCMT11T308-PRA	0.8	0.15-0.40	1.0-3.3		●	●										
		DCMT11T312-PRA	1.2	0.15-0.45	1.5-3.3		●	●										
-UFA		DCMT070202-UFA	0.2	0.08-0.12	0.2-1.0		●	●			●							
		DCMT070204-UFA	0.4	0.15-0.24	0.4-2.0		●	●			●							
		DCMT11T302-UFA	0.2	0.08-0.12	0.2-2.0		●	●			●							
		DCMT11T304-UFA	0.4	0.15-0.24	0.4-2.0		●	●			●	●	●				●	
		DCMT11T308-UFA	0.8	0.15-0.30	0.8-2.0		●	●			●	●						
		DCMT11T312-UFA	1.2	0.15-0.30	1.2-2.0		●	●										
-USA		DCMT070202-USA	0.2	0.08-0.12	0.2-1.0		●	●			●							
		DCMT070204-USA	0.4	0.15-0.24	0.2-2.0		●	●			●	●						
		DCMT11T302-USA	0.2	0.08-0.12	0.2-2.0		●	●			●							
		DCMT11T304-USA	0.4	0.15-0.24	0.3-3.0	●	●	●			●	●						
		DCMT11T308-USA	0.8	0.15-0.30	0.5-3.0	●	●	●			●	●						
		DCMT11T312-USA	1.2	0.20-0.40	0.9-3.3		●	●										
-URA		DCMT11T304-URA	0.4	0.15-0.24	1.0-3.3						●							
		DCMT11T308-URA	0.8	0.15-0.40	1.0-3.3						●							
		DCMT11T312-URA	1.2	0.15-0.45	1.5-3.3						●							

阿诺 - Loong 龍系列 - 正型 RC 刀片

AHNO Loong Series-Positive Insert RC
RCMT (Positive)

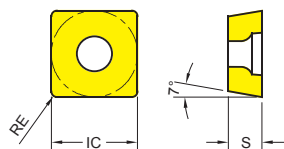


Series	IC	S
RC**0602	6.0	2.38
RC**0803	8.0	3.18
RC**10T3	10.0	3.97
RC**1204	12.0	4.76

					P				M					S		
RCMT	型号 Type	RE	Fn (mm/rev.)	Ap (mm)												
					ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APU10A	APU10A	APS05A	APU10A
-UFA	RCMT0602M0-UFA	M.0	0.15-0.40	0.2-1.5		●	●			●		●			●	
	RCMT0803M0-UFA	M.0	0.15-0.50	0.3-3.0		●	●			●		●			●	
	RCMT10T3M0-UFA	M.0	0.15-0.60	0.4-4.0		●	●			●		●			●	
	RCMT1204M0-UFA	M.0	0.17-1.00	0.5-4.8		●	●			●		●			●	
-USA	RCMT0602M0-USA	M.0	0.15-0.60	0.3-2.4		●	●			●						
	RCMT0803M0-USA	M.0	0.15-0.80	0.5-3.0		●	●			●						
	RCMT10T3M0-USA	M.0	0.30-1.00	0.7-4.0		●	●			●						
	RCMT1204M0-USA	M.0	0.30-1.00	0.7-4.8		●	●			●						

阿诺 - Loong 龍系列 - 正型 SC 刀片

AHNO Loong Series-Positive Insert SC
SCMT (90° Positive)

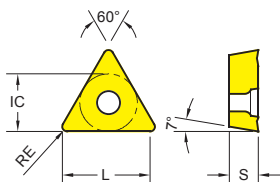


Series	L	IC	S
SC**09T3	9.525	9.525	3.97
SC**1204	12.7	12.7	4.76

					P					M					S				
									New!					New!			New!		
SCMT		型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	AP505A	AP510A	AP520A	APU10A	AP505A	AP510A	AP520A
-PFA		SCMT09T304-PFA	0.4	0.06-0.24	0.3-3.0			●											
		SCMT09T308-PFA	0.8	0.08-0.28	0.6-3.0			●											
-PMA		SCMT09T304-PMA	0.4	0.06-0.25	0.4-3.0			●			●								
		SCMT09T308-PMA	0.8	0.10-0.35	0.8-3.5		●	●	●		●								
-PRA		SCMT09T308-PRA	0.8	0.20-0.40	1.5-4.0		●	●											
		SCMT120408-PRA	0.8	0.20-0.40	1.5-4.5		●	●											
-UFA		SCMT09T304-UFA	0.4	0.15-0.30	0.4-3.0		●	●			●								
		SCMT09T308-UFA	0.8	0.15-0.50	0.8-3.0		●	●			●								
		SCMT120408-UFA	0.8	0.15-0.50	0.8-4.0		●	●			●								
		SCMT120412-UFA	1.2	0.15-0.50	1.2-4.0			●											
-USA		SCMT09T304-USA	0.4	0.15-0.30	0.3-3.0		●	●			●	●							
		SCMT09T308-USA	0.8	0.15-0.35	0.5-3.0		●	●			●	●							
		SCMT120404-USA	0.4	0.15-0.30	0.4-4.0		●	●			●								
		SCMT120408-USA	0.8	0.15-0.30	0.5-4.0		●	●			●	●							
		SCMT120412-USA	1.2	0.15-0.45	0.8-4.0		●	●			●								
-URA		SCMT09T308-URA	0.8	0.20-0.40	1.5-4.0							●							
		SCMT120408-URA	0.8	0.20-0.40	1.5-4.5							●							

阿诺 - Loong 龍系列 - 正型 TC 刀片

AHNO Loong Series-Positive Insert TC
TCMT (60° Positive)

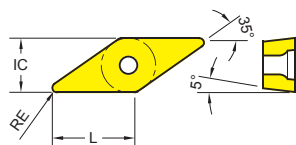


Series	L	IC	S
TC**06T1	6.87	3.97	1.98
TC**0902	9.62	5.56	2.38
TC**1102	11.0	6.35	2.38
TC**16T3	16.5	9.525	3.97

					P					M					S					
TCMT	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	New!	ACM20A	ACM30A	AP505A	New!	APS20A	APU10A	AP505A	New!	APS10A	AP520A	
-PFA		TCMT06T102-PFA	0.2	0.04-0.12	0.2-1.5		●													
		TCMT06T104-PFA	0.4	0.04-0.12	0.3-2.0		●	●			●									
		TCMT090204-PFA	0.4	0.06-0.23	0.3-2.5		●	●			●									
		TCMT110204-PFA	0.4	0.06-0.24	0.3-3.0		●	●	●		●									
		TCMT110208-PFA	0.8	0.08-0.28	0.6-3.0		●	●			●									
		TCMT16T304-PFA	0.4	0.06-0.24	0.3-3.0		●	●	●		●									
		TCMT16T308-PFA	0.8	0.08-0.28	0.6-3.0		●	●	●		●									
-PMA		TCMT110204-PMA	0.4	0.04-0.24	0.3-2.5			●												
		TCMT110208-PMA	0.8	0.10-0.30	0.6-3.0			●	●											
		TCMT16T308-PMA	0.8	0.10-0.35	0.8-3.5			●	●		●									
-PRA		TCMT16T308-PRA	0.8	0.15-0.40	1.0-4.0		●	●	●											
		TCMT16T312-PRA	1.2	0.15-0.45	1.5-4.5		●	●												
-UFA		TCMT110204-UFA	0.4	0.15-0.24	0.4-2.0		●	●			●									
		TCMT16T304-UFA	0.4	0.15-0.24	0.4-3.0		●	●			●									
		TCMT16T308-UFA	0.8	0.15-0.30	0.8-3.0		●	●			●									
-USA		TCMT110202-USA	0.2	0.08-0.12	0.2-2.0		●	●			●	●								
		TCMT110204-USA	0.4	0.15-0.24	0.2-2.0		●	●			●	●								
		TCMT110208-USA	0.8	0.15-0.30	0.5-2.5		●	●			●									
		TCMT16T304-USA	0.4	0.15-0.24	0.3-3.0		●	●			●	●								
		TCMT16T308-USA	0.8	0.15-0.30	0.5-3.0		●	●			●	●								
-URA		TCMT16T308-URA	0.8	0.15-0.40	1.0-4.0						●									

阿诺 - Loong 龍系列 - 正型 VB 刀片

AHNO Loong Series-Positive Insert VB
VBMT (35° Positive)



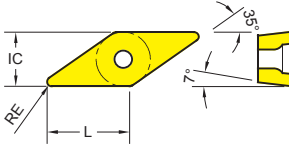
Series	L	IC	S
VB**1102	11.1	6.35	2.38
VB**1103	11.1	6.35	3.18
VB**1604	16.6	9.525	4.76

					P					M					S		
VBMT	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	New!					New!					New!		
					ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	AP505A	AP510A	AP520A	APU10A	AP505A	AP510A
-PFA 	VBMT160404-PFA	0.4	0.06-0.20	0.3-2.5		●	●	●		●							
-PMA 	VBMT160404-PMA	0.4	0.04-0.20	0.2-2.8		●	●	●		●		●				●	
	VBMT160408-PMA	0.8	0.10-0.25	0.6-3.0		●	●	●		●		●				●	
	VBMT160412-PMA	1.2	0.20-0.40	1.0-3.0		●	●										
-PRA 	VBMT160404-PRA	0.4	0.15-0.20	0.8-3.6		●	●										
	VBMT160408-PRA	0.8	0.15-0.35	1.0-3.6		●	●										
	VBMT160412-PRA	1.2	0.15-0.40	1.2-3.6		●	●										
-UFA 	VBMT110204-UFA	0.4	0.15-0.20	0.4-2.0						●							
	VBMT160404-UFA	0.4	0.15-0.20	0.4-2.0	●	●	●			●							
	VBMT160408-UFA	0.8	0.15-0.30	0.8-3.0	●	●	●			●		●				●	
	VBMT160412-UFA	1.2	0.15-0.30	1.2-3.0	●	●	●			●							
-USA 	VBMT110302-USA	0.2	0.07-0.10	0.2-2.0			●			●							
	VBMT110304-USA	0.4	0.15-0.20	0.4-2.0		●	●			●	●						
	VBMT110308-USA	0.8	0.15-0.25	0.8-2.5		●	●			●							
	VBMT160402-USA	0.2	0.07-0.10	0.2-2.0		●	●			●							
	VBMT160404-USA	0.4	0.15-0.20	0.4-2.0		●	●			●	●						
	VBMT160408-USA	0.8	0.15-0.30	0.8-2.5	●	●	●	●		●	●	●				●	
	VBMT160412-USA	1.2	0.20-0.40	1.2-3.0		●	●			●							
-URA 	VBMT160404-URA	0.4	0.15-0.20	0.8-3.6							●						
	VBMT160408-URA	0.8	0.15-0.35	1.0-3.6							●						
	VBMT160412-URA	1.2	0.15-0.40	1.2-3.6							●						

阿诺 - Loong 龍系列 - 正型 VC 刀片

AHNO Loong Series-Positive Insert VC
VCMT (35° Positive)

Series	L	IC	S
VC**1103	11.1	6.35	3.18
VC**1604	16.6	9.525	4.76



					P					M					S			
					New!					New!					New!			
VCMT	型号 Type	RE	Fn (mm/rev.)	Ap (mm)	ACP05A	ACP10A	ACP20A	ACP30A	APU10A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A	APS05A	APS10A	APS20A
-UFA 	VCMT110304-UFA	0.4	0.15-0.20	0.4-2.0		●	●			●								
	VCMT110308-UFA	0.8	0.15-0.25	0.8-2.0		●	●			●								
	VCMT160404-UFA	0.4	0.15-0.20	0.4-2.0		●	●			●								
	VCMT160408-UFA	0.8	0.15-0.30	0.8-3.0		●	●			●								
-USA 	VCMT160404-USA	0.4	0.15-0.20	0.4-2.0		●	●			●								
	VCMT160408-USA	0.8	0.15-0.30	0.8-2.5		●	●			●								

阿诺 - Loong 龍系列 - 切削参数

AHNO Loong Series-Cutting Parameters

工件材料组 Material Group	工件材料的划分和标记字母 Workpiece Material Classification and Defining Letters				布氏硬度 HB	抗拉强度 Rm N/mm ²	刀具材料牌号 Insert Grade									
							切削速度 Vc[m/min]									
							ACP05A	ACP10A	ACP20A	ACP30A	ACM20A	ACM30A	APS05A	APS10A	APS20A	APU10A
P	非合金钢 Non-Alloy Steel	C ≤ 0.25%	退火 Annealed	125	428	250-500	200-450	180-400	160-360					290-310	250-270	205-240
		0.25% < C ≤ 0.55%	退火 Annealed	190	639	225-360	200-320	150-300	100-240					240-260	200-220	195-230
		0.25% < C ≤ 0.55%	调质 Tempered	210	708	195-277	170-210	130-230	85-175					200-220	160-180	185-220
		C > 0.55%	退火 Annealed	190	639	210-346	185-260	140-285	90-230					220-240	180-200	195-230
		C > 0.55%	调质 Tempered	300	1013	165-215	145-165	105-180	60-140							
		易切削钢 (短切屑)	退火 Annealed	220	745	210-346	185-260	135-280	90-230					220-240	180-200	195-230
	低合金钢 Low-Alloyed Steel	退火 Annealed		175	591	218-320	193-240	140-260	100-200							205-240
		调质 Tempered		300	1013	150-200	130-150	90-160	50-120							155-185
		调质 Tempered		380	1282	105-180	90-130	70-145	40-100							130-240
		调质 Tempered		430	1477	45-50	30-35									
	高合金钢 / 高合金工具钢 High-Alloyed Steel	退火 Annealed		200	675	165-330	145-250	105-270	65-200	115-195	95-155	150-240				155-185
		淬火并回火 Quenched and Tempered		300	1013	82-175	75-125	60-130	35-80	60-100	50-80	80-125				125-150
		淬火并回火 Quenched and Tempered		400	1361	50-55	35-45			40-75		75-100				
	不锈钢 Stainless Steel	铁素体 / 马氏体, 退火 Ferritic/Martensitic, Annealed		200	675		170-200	125-220	80-160	165-260	135-245	185-250	200-270	180-250		
		马氏体, 调质 Martensitic, Quenched and Tempered		330	1114		100-150	70-150	50-105	125-200	105-190	140-220	150-230	130-190		
M	不锈钢 Stainless Steel	奥氏体, 淬火 Austenitic, Quenching		200	675					150-240	125-225	120-240	130-260	110-240	130-150	
		奥氏体, 沉淀弥散硬化不锈钢 (PH 不锈钢) Austenitic, Precipitation-Hardening Stainless Steel (PH Stainless Steel)		300	1013					120-150	100-125	80-150	140-160	120-140	120-140	
		奥氏体 - 铁素体, 双相不锈钢 Austenitic-Ferritic, Duplex Stainless Steel		230	778					125-160	105-150	100-160	110-170	90-150	105-130	
K	可锻铸铁 Malleable Cast Iron	铁素体 Ferritic		200	675	270-420	260-370	205-350	145-290							210-275
		珠光体 Pearlitic		260	867	225-360	200-320	150-300	100-240							190-250
	灰口铸铁 Grey Cast Iron	低抗拉强度 Low Tensile Strength		180	602	270-500	240-450	225-400	200-360				180-240			225-295
		高抗拉强度 / 奥氏体 High Tensile Strength / Austenitic		245	825	150-270	145-245	140-200	125-170				132-175			165-215
	球墨铸铁 Nodular Cast Iron	铁素体 Ferritic		155	518	330-700	240-630	210-560	190-500				265-330			240-315
		珠光体 Pearlitic		265	885	240-500	200-450	180-400	160-360				160-200			145-190
N	蠕墨铸铁 Compacted Graphite Iron			200	675											
	锻造铝合金 Wrought Aluminum Alloy	非时效处理 Non-Age-Hardened		30	—											510-600
		可时效处理, 时效处理 Age-Hardenable, Aged		100	343											510-600
	铸造铝合金 Cast Aluminum Alloy	< 12% 硅, 非时效处理 < 12% Silicon, Non-Age-Hardened		75	260											450-550
		< 12% 硅, 可时效处理, 时效处理 < 12% Silicon, Age-Hardenable, Aged		90	314											450-550
		≥ 12% 硅, 非时效处理 ≥ 12% Silicon, Non-Age-Hardened		130	447											400-500
	镁合金 Magnesium Alloy			70	250											
	铜和铜合金 (青铜 / 黄铜) Copper and Copper Alloys (Bronze/Brass)	非合金, 电解铜 Non-Alloyed, Electrolytic Copper		100	343											200-250
		黄铜, 青铜, 红黄铜 Brass, Bronze, Red Brass		90	314											380-450
				110	382											275-320
		高强度的 Ampco 合金 High-Strength Ampco Alloy		300	1013											105-120
S	耐热合金 Heat-Resistant Alloy	铁基 Iron-Based	退火 Annealed	200	675						55-115		65-130	65-100	60-90	
			时效处理 Age-Hardened	280	943						50-90		55-105	55-80	50-70	
		镍基或钴基 Nickel-Based or Cobalt-Based	退火 Annealed	250	839						50-90		55-105	55-80	50-70	
			时效处理 Age-Hardened	350	1177						40-75		45-90	45-70	40-60	60-70
			铸造	320	1076						35-65		35-80	35-60	30-50	
	钛合金 Titanium Alloy	纯钛 Pure Titanium		200	675											
		α 相和 β 相合金, 时效处理 α-Phase and β-Phase Alloys, Aged		375	1262						30-60		40-80		40-70	
		β 相合金 β-Phase Alloy		410	1396						20-35		25-50		25-40	
	钨合金 Tungsten Alloy			300	1013											
	钼合金 Molybdenum Alloy			300	1013											
H	淬硬钢 Hardened Steel	淬火并回火 Quenched and Tempered		50 HRC	—											45-50
		淬火并回火 Quenched and Tempered		55 HRC	—								30-45			35-40
		淬火并回火 Quenched and Tempered		60 HRC	—								30-45			25-30
	淬硬铸铁 Hardened Cast Iron	淬火并回火 Quenched and Tempered		55 HRC	—								30-40			35-40

MILLING SERIES

铣削系列



铣削用可转位刀片按照 ISO 1832 标准的符号说明
Milling Inserts According to ISO 1832 Standard Code System

示例 1:
Example 1:

H	N	G	X	09	06	ANSN
1	2	3	4	5	6	7

1、刀片形状
1. Insert shape

代号 Symbol	图形 Shape	代号 Symbol	图形 Shape
A		M	
B		O	
C		P	
D		R	
E		S	
H		T	
K		V	
L		W	

2、后角
2. Clearance Angle

代号 Symbol	图形 Shape	代号 Symbol	图形 Shape
A		N	
B		P	
C			
D			
E			
F			
G			

3、公差
3. Tolerance

允许公差 (mm) Permissible Deviation	d	m	s
	A ± 0,025	± 0,005	± 0,025
	C ± 0,025	± 0,013	± 0,025
	E ± 0,025	± 0,025	± 0,025
	F ± 0,013	± 0,005	± 0,025
	G ± 0,025	± 0,025	± 0,130
	H ± 0,013	± 0,013	± 0,025
	J ¹ ± 0,05-0,15 ²	± 0,005	± 0,025
	K ¹ ± 0,05-0,15 ²	± 0,013	± 0,025
	L ¹ ± 0,05-0,15 ²	± 0,025	± 0,025
	M ± 0,05-0,15 ²	± 0,08-0,20 ²	± 0,130
	N ± 0,05-0,15 ²	± 0,08-0,20 ²	± 0,025
	U ± 0,08-0,25 ²	± 0,13-0,38 ²	± 0,130

¹ 刀片有精磨的副切削刃
Inserts with ground secondary cutting edges

² 视刀片尺寸而定 (见 ISO 1832 标准)
Depending on insert size ISO standard 1832

4、刀片加工和固定特征
4. Machining and Fastening Features

代号 Symbol	图形 Shape	代号 Symbol	图形 Shape	代号 Symbol	图形 Shape
A		H		R	
B		J		T	
C		M		U	
F		N		W	
G		Q		X	

需要可转位刀片的图纸
或准确说明
Drawing or precise description
of indexable insert required

示例 2:
Example 2:



5、切削刃长度

5. Cutting Edge Length

¹ 英制规格 (00) Inch

刀片形状 Insert Shape								
内切圆直径 d IC Diameter d								
mm	英寸	规格 Size	规格 Size	规格 Size	规格 Size	规格 Size	规格 Size	规格 Size
3,97	5/32					06		
5	0,197			05				03
5,56	7/32					09		
6	0,236			06				
6,35	2/8	06	07	06 ¹		11	11	04
8	0,315			08				05
9,525	3/8	09	11	09 ¹	09	16	16	06
10	0,394			10				
12	0,472			12				
12,7	4/8	12	15	12 ¹	12	22	22	08
15,875	5/8	16			15	27		10
16	0,63			16				
17,46	11/16							12
19,05	6/8	19		19 ¹	19			
20	0,787			20				
25	0,984			25				
25,4	8/8	25		25 ¹	25			
32	1,26			32				

6、刀片厚度

6. Insert Thickness

图形 Shape	厚度 s(mm) Thickness
	01 1,59
	T1 1,98
	02 2,38
	T2 2,78
	03 3,18
	T3 3,97
	04 4,76
	05 5,56
	06 6,35
	07 7,94
	09 9,52

7、圆角半径

7. Corner Radius

图形 Shape	半径 r(mm) Radius
	01 0,1
	02 0,2
	04 0,4
	08 0,8
	12 1,2
	16 1,6
	24 2,4
	M0 公制规格 (直径以 mm 单位) Metric (Diameter unit is mm)
	00 英制规格 (英制尺寸换算以 mm 单位) Inch (Inch converts to mm)

8、切削刃形状

8. Cutting Shape

代号 Symbol	图形 Shape
F	
E	
T	
S	

9、切削方向

9. Cutting Direction

图形 Shape

槽型介绍

Chipbreaker Introduction

示例：
Example :

M	5
8-1	8-2

8-1、槽型代号

8-1. Chipbreaker Code

代号 Symbol	用途 Application
F	精加工 / 轻切削 Finishing / Light Cutting
S	半精加工 Semi Finishing
M	中等加工 Medium Machining
R	粗加工 Roughing
H	重切削 Heavy Machining
W	Wiper 修光刃 Wiper Insert

8-2、功能代号

8-2. Function Code

代号 Symbol	锋利度 Sharpness
1	
2	
3	
4	
5	
6	
7	

示例：
Example :



功能序号 Function No.	说明 Description	详情 Details			
1	AHNO 阿诺				
2	基础材料及 涂层代码 Basic Materials & Coating Code	C	硬质合金 +CVD Carbide + CVD	V	金属陶瓷 +PVD Cermet +PVD
		P	硬质合金 +PVD Carbide + PVD	I	塞隆陶瓷 Sialon Ceramics
		B	CBN	W	晶须陶瓷 Whisker Ceramics
		D	PCD	N	硬质合金无涂层 Uncoated Carbide
		T	金属陶瓷 Cermet		
3	第一推荐应用 First Recommended Application	P	钢 Steel	S	难加工材料 Super Alloy
		M	不锈钢 Stainless Steel	H	硬材料 Hard Materials
		K	铸铁 Cast Iron	U	通用 General
		N	有色金属 Non-Ferrous Metals		
4	ISO 应用范围 ISO Application Range	0515253545 耐磨性 Wear Resistance 韧性 Toughness			
5	系列代码 Series Code				

铣削刀体命名

Milling Body Name Code

示例：
Example :

M1345(F) - HN09(N) - D100 - B40(L) - Z9 - (L70) - C

123456789101112

产品系列号
Product Series No.

1、刀具产品系列
1. Product Series

切削方式 Cutting Type	系列号 Series No.
面铣 Face Milling	M1
方肩铣刀 Shoulder Milling	M2
快进给 High Feed Milling	M3
仿形 Profile Milling	M4
三面刃 Side Milling	M5
螺纹铣刀 Thread Milling	M6
倒角 Chamfer Milling	M7
玉米铣 Porcupine Milling	M9

2、代次
2. Generation

系列代次 Generation Series
3 代：龍系列产品 3rd Generation: Loong series

3、主偏角 (Kr)
3. Cutting Edge Angle

数值 Value	角度 Angle
90	90
88	88
75	75
45	45
.	.
.	.
15	15
00	圆刀片 Circular Insert

4、刀刃类型
4. Cutting Edge Type

代号 Symbol	微调节刃 Runout Adjustable
F	微调结构 With Micro Adjusting Edge

5、刀片
5. Insert

刀片型号 Insert Type

6、刀盘类型
6. Milling Cutter Type

代号 Symbol	楔块式刀盘 Wedge Clamping Milling Cutter
N	模块压紧 Wedge Clamping

7、直径
7. Diameter

刀具直径 Tool Diameter

8、接口
8. Interface

代号 Symbol	连接方式 Connection Type
B	芯轴式 Arbor
W	侧固式 Weldon
A	圆柱式 Cylindrical
M	螺纹接口 Threading

9、切削方向
9. Feed Direction

代号 Symbol	旋向 Rotation Direction
R	右手 (缺省) Right-hand (Default)
L	左手 Left-hand

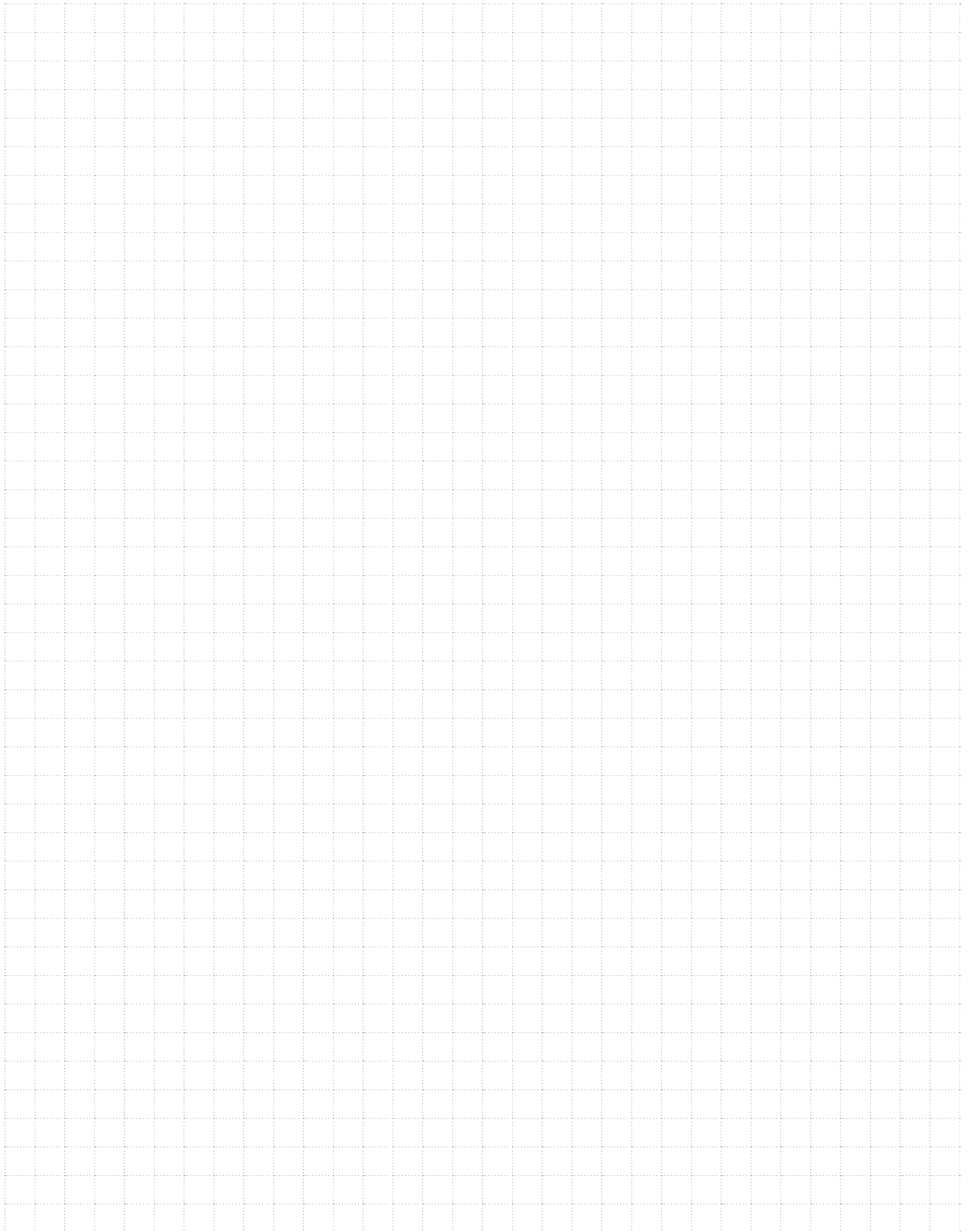
10、齿数
10. Number of Teeth

刀体齿数 Teeth Quantities of Milling Cutter
特殊长度 Special Length

11、长度
11. Length

12、其他
12. Other

代号 Symbol	类型 Type
C	带内冷 With Internal Coolant
无标记 Unmarked	不带内冷 Without Internal Coolant



铣削材质一览

Milling Grade Overview

铣削材料应用 Milling Grade Application														
铣削材质 Milling Geade	ISO 组别 ISO Group	涂层工艺 Coating Technology	工件材料组别 Workpiece Material Group						应用范围 Application Range					技术说明 Technology Description
			P	M	K	N	S	H	05	15	25	35	45	
ACP25A	P15~P25	CVD	●							●			铣削通用材质，高强度基体搭载中温化学涂层，实现了耐磨性和韧性的均衡结合，适用于加工钢和铸铁材料，尤其是较高线速度的应用场合。 Universal grade combined high-strength substrate and medium-temperature CVD coating. A balance grade with both wear resistance and toughness, appropriate for steel and cast iron, especially for high cutting speed applications.	
	K20~K30				●					●				
APP25A	P25~P35	PVD	●							●			多功能的铣削材质，具有良好的热稳定性，广泛应用于各类钢、球铁以及不锈钢材料，是通用铣削的最佳选择。 A versatile milling grade with good heat stability. Widely used for steel, nodular iron and stainless steel, best choice for general machining.	
	M20~M30			●					●					
	K25~K35				○					●				
APU35A	P30~P40	PVD	●							●			多功能的铣削材质，凭借高韧性的基体以及领先的物理涂层技术，即使面对不利的加工条件，依然能够保持良好的可靠性，有效地覆盖了钢、不锈钢及部分难加工材料的切削。 A versatile milling grade with high-toughness substrate and advanced PVD coating. Good reliability even in unfavorable conditions, mainly for steel, stainless steel and titanium.	
	M25~M35			●					●					
	S20~S30					○			●					
APH05A	P05~P10	PVD	○						●			精加工的铣削材质，极细晶粒度的基体搭载超薄物理涂层，具有优异的耐磨性，主要应用于模具行业的仿形铣刀，适用于淬火钢、高强度合金钢、不锈钢以及难加工材料。 A finish milling grade with an ultra-fine grain substrate and thin PVD coating. Mainly application is profile milling in Mold & Die industry due to excellent wear resistance. Recommend for hardened steel, high-strength alloy steel, stainless steel and supper alloy.		
	M05~M10			○				●						
	S05~S15					○		●						
	H05~H15						●	●						

● 第一推荐 1st choice ○ 第一推荐 2nd choice

铣削材质一览

Milling Grade Overview

被加工材料组 Workpiece Material Group		刀具材质 Insert Grade	涂层类型 Coating Type	应用类别 Application				
				05	15	25	35	45
P	碳素钢 / 合金钢 Carbon Steel / Alloyed Steel	硬质合金 Carbide	PVD	APH05A				
		硬质合金 Carbide	CVD		ACP25A			
		硬质合金 Carbide	PVD			APP25A		
		硬质合金 Carbide	PVD				APU35A	
M	不锈钢 Stainless Steel	硬质合金 Carbide	PVD	APH05A				
		硬质合金 Carbide	PVD		APP25A			
		硬质合金 Carbide	PVD			APU35A		
K	铸铁 Cast Iron	硬质合金 Carbide	CVD		ACP25A			
		硬质合金 Carbide	PVD			APP25A		
S	铝合金 Aluminum Alloy	-	-					
	高温合金 / 钛合金 Heat-Resistant Alloy / Titanium Alloy	硬质合金 Carbide	PVD	APH05A				
		硬质合金 Carbide	PVD		APU35A			
	硬材料 Hard Materials	硬质合金 Carbide	PVD	APH05A				

阿诺 - Loong 龍系列 - 铣削刀具索引

合金刀片类

AHNO Loong Series-Milling Index

Carbide Insert

系列 Series			M1345-HN06	M1345-HN09	M1345-ON06		M2390-TN11	M2390-TN17	M2390-SX09	M2390-SX12
										
页码 Page			P.46	P.48	P.50		P.52	P.56	P.58	P.60
主偏角 Cutting Edge Angle			45°	45°	43°		90°	90°	90°	90°
最大切深 Maximum Cutting Depth			3.0	5.0	4.0 / 7.0		5.0	8.0	8.0	10.0
直径范围 Diameter Range			25~125	50~315	50~250		20~63	32~160	20~125	50~160
刀片 Insert										
			HN0604	HN0906	ON0605	SN1705	TN1104	TN1706	SX09T3	SX1205
应用 Application	面铣 Face Milling		✓	✓	✓	✓	✓	✓	✓	✓
	方肩铣 Shoulder Milling						✓	✓	✓	✓
	槽铣 Slot Milling						✓	✓	✓	✓
	坡铣 Ramp Milling									
	螺旋插补铣 Helix Interpolation Milling						✓			
	插铣 Plunge Milling									
	仿形铣 Profiling Milling									
	倒角铣 Chamfer Milling		✓	✓						
	型腔铣 Pocket Milling									

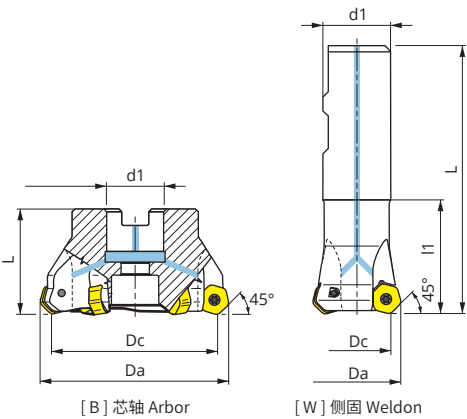
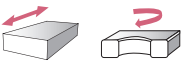
阿诺 - Loong 龍系列 - 铣削刀具索引 合金刀片类

AHNO Loong Series-Milling Index Carbide Insert

系列 Series			M2390-XO10	M2390-XO16	M1300-RC10	M1300-RC12	M1300-RC16	M1300-RC20		
										
页码 Page			P.62	P.64	P.66	P.68	P.70	P.72		
主偏角 Cutting Edge Angle			90°	90°	-	-	-	-		
最大切深 Maximum Cutting Depth			9.0	15.0	5.0	6.0	8.0	10.0		
直径范围 Diameter Range			16~50	25~160	25~66	40~100	63~160	80~160		
刀片 Insert										
			XO1003	XO1606	RC10T3	RC1204	RC1606	RC2006		
应用 Application	面铣 Face Milling		✓	✓	✓	✓	✓	✓		
	方肩铣 Shoulder Milling		✓	✓						
	槽铣 Slot Milling		✓	✓						
	坡铣 Ramp Milling		✓	✓	✓	✓	✓	✓		
	螺旋插补铣 Helix Interpolation Milling		✓	✓	✓	✓	✓	✓		
	插铣 Plunge Milling									
	仿形铣 Profiling Milling				✓	✓	✓	✓		
	倒角铣 Chamfer Milling									
	型腔铣 Pocket Milling		✓	✓	✓	✓	✓	✓		

阿诺 - Loong 龍系列 - 45°主偏角面铣刀

AHNO Loong Series-45° Approach Angle Face Milling Cutter
M1345-HN06 Series



单位 Unit: mm

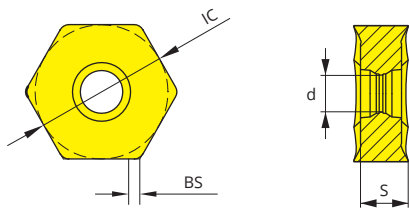
Series W	型号 Type	Dc	Da	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
HN0604	M1345-HN06-D025-W25-Z2-C	25	32.2	25	42	99	3.0	2	有 Yes
	M1345-HN06-D032-W32-Z3-C	32	39.3	32	42	103	3.0	3	有 Yes

Series B	型号 Type	Dc	Da	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
HN0604	M1345-HN06-D040-B16-Z5-C	40	47.3	16	40	3.0	5	有 Yes
	M1345-HN06-D050-B22-Z4-C	50	57.3	22	40	3.0	4	有 Yes
	M1345-HN06-D050-B22-Z6-C	50	57.3	22	40	3.0	6	有 Yes
	M1345-HN06-D063-B22-Z6-C	63	70.3	22	40	3.0	6	有 Yes
	M1345-HN06-D063-B22-Z8-C	63	70.3	22	40	3.0	8	有 Yes
	M1345-HN06-D080-B27-Z7-C	80	86.8	27	50	3.0	7	有 Yes
	M1345-HN06-D080-B27-Z10-C	80	86.8	27	50	3.0	10	有 Yes
	M1345-HN06-D100-B32-Z8-C	100	107.1	32	50	3.0	8	有 Yes
	M1345-HN06-D100-B32-Z12-C	100	107.1	32	50	3.0	12	有 Yes
	M1345-HN06-D125-B40-Z10-C	125	132.2	40	63	3.0	10	有 Yes

阿诺 - Loong 龍系列 - 45°主偏角面铣刀

AHNO Loong Series-45° Approach Angle Face Milling Cutter
M1345-HN06 Series

	IC	d	S
HN0604 XN0604	10.5	3.7	4.76



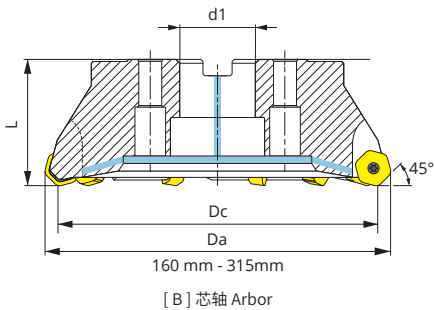
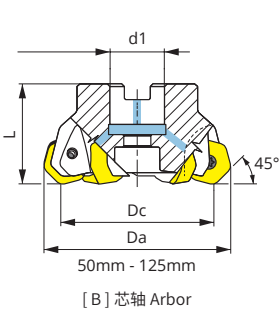
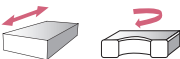
Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	 HNGX0604ANSN-F5	-	1.1	●	●	●	●	●	●	●	●
-M5	 HNGX0604ANSN-M5	-	0.8	●	●	●	●	●	●	●	●
-R5	 HNGX0604ANSN-R5	-	0.8	●		●		●	●		
-W5	 XNGX0604ANSN-W5	-	4.15	●	●		●		●	●	

附件 Assembly Parts		D25~D32	D40~D125
	刀片锁紧螺钉 Insert Clamping Screw	AF9021(Torx 09IP)-2.0 Nm	AF9021(Torx 09IP)-2.0 Nm
	旗形扳手 Flag Wrench	AF8010-T09IP	
	钥匙形扳手 Key Wrench		AF8020-T09IP

备件 Accessories		D40	D50~D63	D80	D100	D125
	内六角螺栓 Hexagon Socket Bolt	AF5111	AF5112			
	十字螺栓 Cross Bolt			AF5201	AF5202	AF5203
	十字螺栓扳手 Wrench for Cross Bolt			AF6201	AF6202	AF6203

阿诺 - Loong 龍系列 - 45°主偏角面铣刀

AHNO Loong Series-45° Approach Angle Face Milling Cutter
M1345-HN09 Series



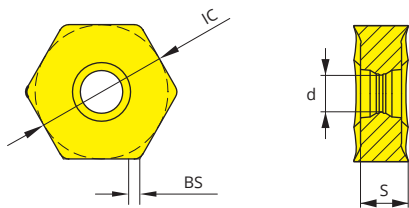
单位 Unit: mm

Series B	型号 Type	Dc	Da	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
HN0906	M1345-HN09-D050-B22-Z4-C	50	61.7	22	40	5.0	4	有 Yes
	M1345-HN09-D063-B22-Z6-C	63	74.7	22	40	5.0	6	有 Yes
	M1345-HN09-D080-B27-Z6-C	80	91.7	27	50	5.0	6	有 Yes
	M1345-HN09-D080-B27-Z8-C	80	91.7	27	50	5.0	8	有 Yes
	M1345-HN09-D100-B32-Z6-C	100	111.7	32	50	5.0	6	有 Yes
	M1345-HN09-D100-B32-Z8-C	100	111.7	32	50	5.0	8	有 Yes
	M1345-HN09-D100-B32-Z10-C	100	111.7	32	50	5.0	10	有 Yes
	M1345-HN09-D125-B40-Z6-C	125	136.7	40	63	5.0	6	有 Yes
	M1345-HN09-D125-B40-Z8-C	125	136.7	40	63	5.0	8	有 Yes
	M1345-HN09-D125-B40-Z10-C	125	136.7	40	63	5.0	10	有 Yes
	M1345-HN09-D125-B40-Z12-C	125	136.7	40	63	5.0	12	有 Yes
	M1345-HN09-D160-B40-Z8-C	160	171.7	40	63	5.0	8	有 Yes
	M1345-HN09-D160-B40-Z12-C	160	171.7	40	63	5.0	12	有 Yes
	M1345-HN09-D160-B40-Z14-C	160	171.7	40	63	5.0	14	有 Yes
	M1345-HN09-D200-B60-Z10-C	200	211.7	60	63	5.0	10	有 Yes
	M1345-HN09-D250-B60-Z14-C	250	261.7	60	63	5.0	14	有 Yes
	M1345-HN09-D315-B60-Z16-C	315	326.7	60	80	5.0	16	有 Yes

阿诺 - Loong 龍系列 - 45°主偏角面铣刀

AHNO Loong Series-45° Approach Angle Face Milling Cutter
M1345-HN09 Series

	IC	d	S
HN0906	16.5	4.9	6.35
XN0906			



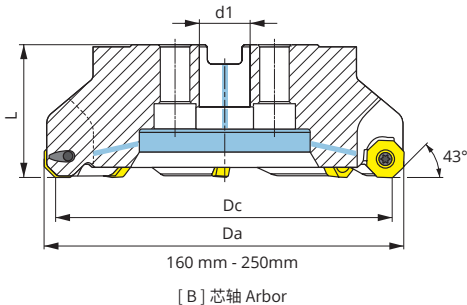
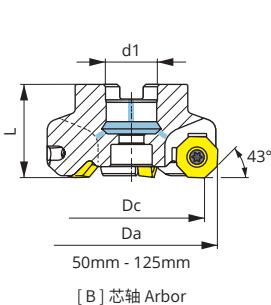
Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F1	HNGX0906ANEN-F1	-	1.5		●	●	●	●		●	●
-F5	HNGX0906ANSN-F5	-	1.2	●	●	●	●	●	●	●	●
-M5	HNGX0906ANSN-M5	-	1.2	●	●	●	●	●	●	●	●
-R5	HNGX0906ANSN-R5	-	1.2	●	●	●	●	●	●	●	●
-W5	XNGX0906ANSN-W5	-	7.5	●	●		●		●	●	

附件 Assembly Parts		D50~D160	D200~D315
	刀片锁紧螺钉 Insert Locking Screw	AF9022(Torx 15IP)-5.0 Nm	AF9022(Torx 15IP)-5.0 Nm
	钥匙形扳手 Key-shaped Wrench	AF8020-T15IP	
	螺丝刀 Screwdriver		AF8030-T15IP

备件 Accessories		D50~D63	D80	D100	D125	D160	D200	D250	D315
	内六角螺栓 Hexagon Socket Bolt	AF5112				AF5114	AF5115	AF5115	AF5115
	十字螺栓 Cross Bolt		AF5201	AF5202	AF5203				
	十字螺栓扳手 Wrench for Cross Bolt		AF6201	AF6202	AF6203				
	内冷端盖 Internal Coolant End Cover					AF5311	AF5312	AF5313	AF5314
	端盖锁紧内六角螺钉 Hexagon Socket Screw for Coolant Cap					AF5121	AF5122	AF5122	AF5123
	端盖锁紧内六角扳手 Wrench for Hexagon Socket Screw					AF6100-05	AF6100-07	AF6100-07	AF6100-07
	堵头 Plug								AF5501

阿诺 - Loong 龍系列 - 45°主偏角面铣刀

AHNO Loong Series-45° Approach Angle Face Milling Cutter
M1345-ON06 Series



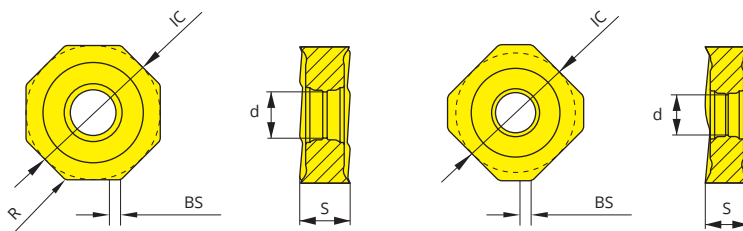
单位 Unit: mm

Series B	型号 Type	Dc	Da	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
ON0605	M1345-ON06-D050-B22-Z4-C	50	60.8	22	40	4.0	4	有 Yes
	M1345-ON06-D050-B22-Z5-C	50	60.8	22	40	4.0	5	有 Yes
	M1345-ON06-D063-B22-Z5-C	63	73.8	22	40	4.0	5	有 Yes
	M1345-ON06-D063-B22-Z6-C	63	73.8	22	40	4.0	6	有 Yes
	M1345-ON06-D080-B27-Z6-C	80	90.8	27	50	4.0	6	有 Yes
	M1345-ON06-D080-B27-Z8-C	80	90.8	27	50	4.0	8	有 Yes
	M1345-ON06-D100-B32-Z8-C	100	110.8	32	50	4.0	8	有 Yes
	M1345-ON06-D100-B32-Z10-C	100	110.8	32	50	4.0	10	有 Yes
	M1345-ON06-D125-B40-Z8-C	125	135.8	40	63	4.0	8	有 Yes
	M1345-ON06-D125-B40-Z10-C	125	135.8	40	63	4.0	10	有 Yes
	M1345-ON06-D125-B40-Z12-C	125	135.8	40	63	4.0	12	有 Yes
	M1345-ON06-D160-B40-Z8-C	160	170.8	40	63	4.0	8	有 Yes
	M1345-ON06-D160-B40-Z12-C	160	170.8	40	63	4.0	12	有 Yes
	M1345-ON06-D160-B40-Z14-C	160	170.8	40	63	4.0	14	有 Yes
	M1345-ON06-D200-B60-Z12-C	200	210.8	60	63	4.0	12	有 Yes
	M1345-ON06-D200-B60-Z16-C	200	210.8	60	63	4.0	16	有 Yes
	M1345-ON06-D250-B60-Z14-C	250	260.8	60	63	4.0	14	有 Yes
	M1345-ON06-D250-B60-Z18-C	250	260.8	60	63	4.0	18	有 Yes

阿诺 - Loong 龍系列 - 45°主偏角面铣刀

AHNO Loong Series-45° Approach Angle Face Milling Cutter
M1345-ON06 Series

	IC	d	S
ON0605 SN1705	17	5.7	5.56



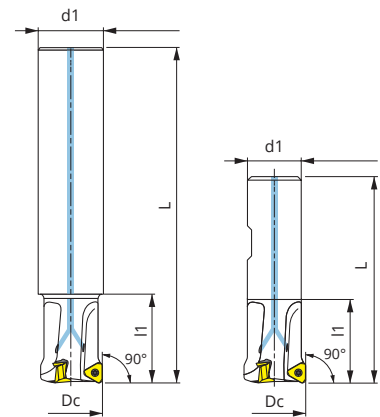
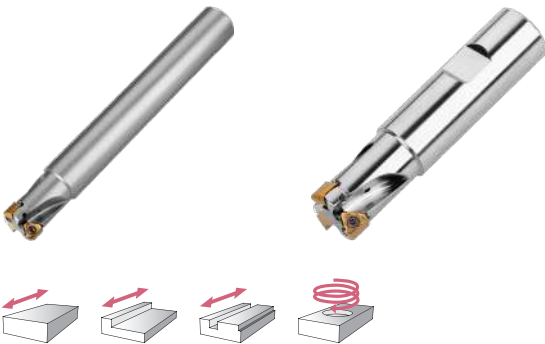
Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	ONMX060508SR-F5	0.8	0.75	●	●	●	●	●	●	●	●
-M5	ONMX060508SR-M5	0.8	0.75	●	●	●	●	●	●	●	●
-R5	ONMX060508SR-R5	0.8	0.75	●	●	●	●	●	●	●	●
-W5	ONMX060508SR-W5	0.8	4.3	●	●		●		●	●	
-M5	SNMX170508SR-M5	0.8	0.7	●	●	●	●	●	●	●	●
-R5	SNMX170508SR-R5	0.8	0.7	●	●	●	●	●	●	●	●

附件 Assembly Parts		D50~D160	D200~D315
	刀片锁紧螺钉 Insert Clamping Screw	AF9031(Torx 20IP)-5.0 Nm	AF9031(Torx 20IP)-5.0 Nm
	钥匙形扳手 Key Wrench	AF8020-T20IP	
	螺丝刀 Screwdriver		AF8030-T20IP

备件 Accessories		D50~D63	D80	D100	D125	D160	D200	D250
	内六角螺栓 Hexagon Socket Bolt	AF5112	AF5113			AF5114	AF5115	AF5115
	十字螺栓 Cross Bolt			AF5202	AF5203			
	十字螺栓扳手 Wrench for Cross Bolt			AF6202	AF6203			
	内冷端盖 Internal Coolant Cap					AF5311	AF5312	AF5313
	端盖锁紧内六角螺钉 Hexagon Socket Screw for Coolant Cap					AF5121	AF5122	AF5122
	端盖锁紧内六角扳手 Wrench for Hexagon Socket Screw					AF6100-05	AF6100-07	AF6100-07

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-TN11 Series



[A] 圆柱 Cylinder

[W] 侧固 Weldon

[B] 芯轴 Arbor

单位 Unit: mm

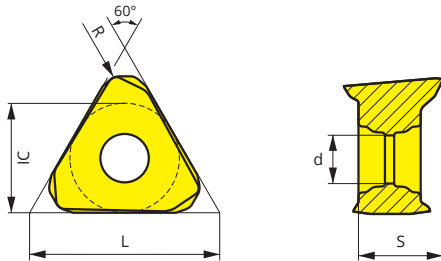
Series A	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
TN1104	M2390-TN11-D020-A20-Z2-C	20	20	29	150	5.0	2	有 Yes
	M2390-TN11-D022-A25-Z3-C	22	25	50	180	5.0	3	有 Yes
	M2390-TN11-D025-A25-Z3-C	25	25	34	170	5.0	3	有 Yes
	M2390-TN11-D025-A25-Z4-C	25	25	34	170	5.0	4	有 Yes
	M2390-TN11-D030-A32-Z4-C	30	32	50	200	5.0	4	有 Yes
	M2390-TN11-D032-A32-Z4-C	32	32	37	195	5.0	4	有 Yes
	M2390-TN11-D032-A32-Z5-C	32	32	37	195	5.0	5	有 Yes
	M2390-TN11-D035-A32-Z5-C	35	32	80	200	5.0	5	有 Yes

Series W	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
TN1104	M2390-TN11-D020-W20-Z2-C	20	20	32	90	5.0	2	有 Yes
	M2390-TN11-D025-W25-Z3-C	25	25	42	100	5.0	3	有 Yes
	M2390-TN11-D025-W25-Z4-C	25	25	42	100	5.0	4	有 Yes
	M2390-TN11-D032-W32-Z4-C	32	32	42	110	5.0	4	有 Yes
	M2390-TN11-D032-W32-Z5-C	32	32	42	110	5.0	5	有 Yes

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-TN11 Series

	IC	d	L	S
TN1104	6.35	2.8	11	4.69



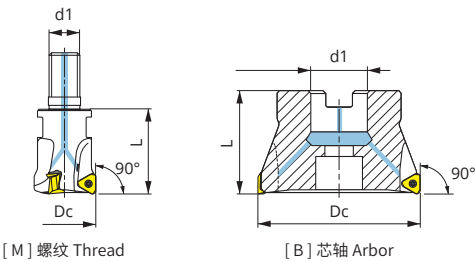
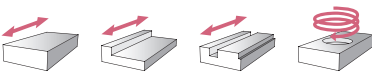
Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	 TNEX110404SR-F5	0.4	1.3	●	●	●	●	●	●	●	●
-F5	 TNEX110408SR-F5	0.8	0.9	●	●	●	●	●	●	●	●
-M5	 TNEX110404SR-M5	0.4	1.3	●	●	●	●	●	●	●	●
-M5	 TNEX110408SR-M5	0.8	0.9	●	●	●	●	●	●	●	●

附件 Assembly Parts		D20~D35	D40~D63
	刀片锁紧螺钉 Insert Clamping Screw	AF9041(Torx 07IP)-0.8 Nm	AF9041(Torx 07IP)-0.8 Nm
	旗形扳手 Flag Wrench	AF8010-T07IP	
	钥匙形扳手 Key Wrench		AF8020-T07IP

备件 Accessories		D40	D50~D63
	内六角螺栓 Hexagon Socket Bolt	AF5111	AF5112

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-TN11 Series



单位 Unit: mm

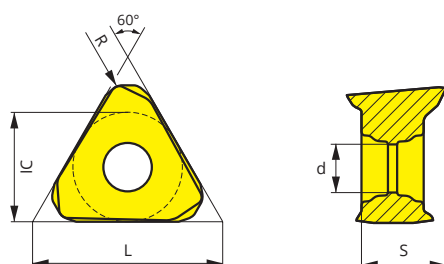
Series M	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
TN1104	M2390-TN11-D020-M10-Z2-C	20	M10	26	5.0	2	有 Yes
	M2390-TN11-D025-M12-Z3-C	25	M12	33	5.0	3	有 Yes
	M2390-TN11-D025-M12-Z4-C	25	M12	33	5.0	4	有 Yes
	M2390-TN11-D032-M16-Z4-C	32	M16	43	5.0	4	有 Yes
	M2390-TN11-D032-M16-Z5-C	32	M16	43	5.0	5	有 Yes

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
TN1104	M2390-TN11-D040-B16-Z4-C	40	16	40	5.0	4	有 Yes
	M2390-TN11-D040-B16-Z6-C	40	16	40	5.0	6	有 Yes
	M2390-TN11-D050-B22-Z5-C	50	22	40	5.0	5	有 Yes
	M2390-TN11-D050-B22-Z7-C	50	22	40	5.0	7	有 Yes
	M2390-TN11-D063-B22-Z6-C	63	22	40	5.0	6	有 Yes
	M2390-TN11-D063-B22-Z9-C	63	22	40	5.0	9	有 Yes

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-TN11 Series

	IC	d	L	S
TN1104	6.35	2.8	11	4.69



Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	 TNEX110404SR-F5	0.4	1.3	●	●	●	●	●	●	●	●
-F5	 TNEX110408SR-F5	0.8	0.9	●	●	●	●	●	●	●	●
-M5	 TNEX110404SR-M5	0.4	1.3	●	●	●	●	●	●	●	●
-M5	 TNEX110408SR-M5	0.8	0.9	●	●	●	●	●	●	●	●

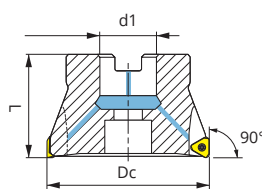
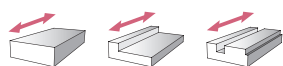
附件 Assembly Parts		D20~D35	D40~D63
	刀片锁紧螺钉 Insert Clamping Screw	AF9041(Torx 07IP)-0.8 Nm	AF9041(Torx 07IP)-0.8 Nm
	旗形扳手 Flag Wrench	AF8010-T07IP	
	钥匙形扳手 Key Wrench		AF8020-T07IP

备件 Accessories		D40	D50~D63
	内六角螺栓 Hexagon Socket Bolt	AF5111	AF5112

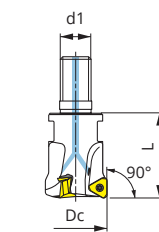
阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter

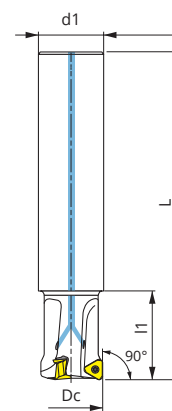
M2390-TN17 Series



[B] 芯轴 Arbor



[M] 螺纹 Thread



[A] 圆柱 Cylinder

单位 Unit: mm

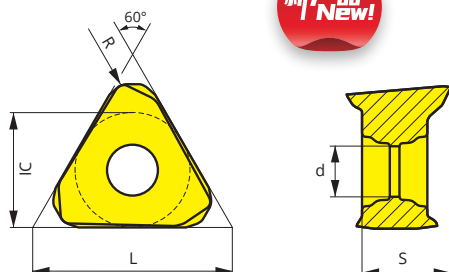
Series A	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
TN1706	M2390-TN17-D032-A32-Z2-C	32	32	34	195	10	2	有 Yes

Series M	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
TN1706	M2390-TN17-D040-M16-Z4-C	40	M16	43	10	4	有 Yes

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
TN1706	M2390-TN17-D050-B22-Z4-C	50	22	40	10	4	有 Yes
	M2390-TN17-D050-B22-Z5-C	50	22	40	10	5	有 Yes
	M2390-TN17-D063-B22-Z4-C	63	22	40	10	4	有 Yes
	M2390-TN17-D063-B22-Z6-C	63	22	40	10	6	有 Yes
	M2390-TN17-D080-B27-Z5-C	80	27	50	10	5	有 Yes
	M2390-TN17-D080-B27-Z7-C	80	27	50	10	7	有 Yes
	M2390-TN17-D100-B32-Z6-C	100	32	50	10	6	有 Yes
	M2390-TN17-D100-B32-Z8-C	100	32	50	10	8	有 Yes
	M2390-TN17-D125-B40-Z7-C	125	40	63	10	7	有 Yes
	M2390-TN17-D125-B40-Z9-C	125	40	63	10	9	有 Yes
	M2390-TN17-D160-B40-Z10	160	40	63	10	10	无 No

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-TN17 Series



	IC	d	L	S
TN1706	10.525	4.4	18.23	6.88

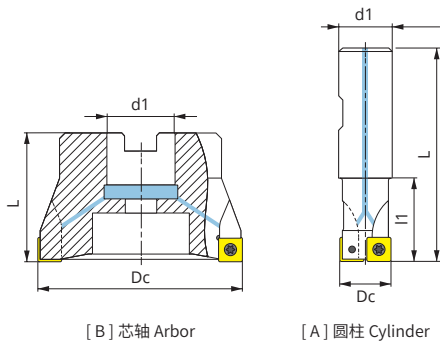
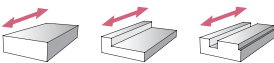
Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	TNEX170604SR-F5	0.4	2.1		●	●	●	●		●	●
-F5	TNEX170608SR-F5	0.8	1.9	●	●	●	●	●	●	●	●
-M5	TNEX170604SR-M5	0.4	2.1		●	●	●	●		●	●
-M5	TNEX170608SR-M5	0.8	1.9	●	●	●	●	●	●	●	●
-M5	TNEX170612SR-M5	1.2	1.7	●		●		●	●		●
-M5	TNEX170616SR-M5	1.6	1.1	●		●		●	●		●

附件 Assembly Parts		D32~D40	D40~D160
	刀片锁紧螺钉 Insert Clamping Screw	AF9042(Torx 15IP)-3.5 Nm	AF9042(Torx 15IP)-3.5 Nm
	旗形扳手 Flag Wrench	AF8010-T15IP	
	钥匙形扳手 Key Wrench		AF8020-T15IP

备件 Accessories		D50~D63	D80	D100	D125	D160
	内六角螺栓 Hexagon Socket Bolt	AF5112	AF5113	—	AF5117	AF5114

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-SX09 Series



单位 Unit: mm

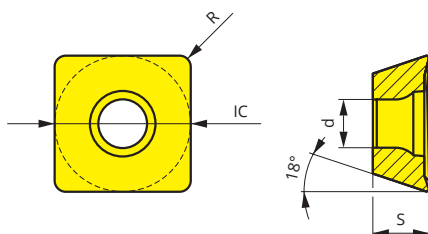
Series A	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
SX09T3	M2390-SX09-D020-W20-Z2-C	20	20	32	82	8.0	2	有 Yes
	M2390-SX09-D025-W25-Z3-C	25	25	42	98	8.0	3	有 Yes
	M2390-SX09-D032-W32-Z4-C	32	32	42	102	8.0	4	有 Yes

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
SX09T3	M2390-SX09-D040-B16-Z5-C	40	16	40	8.0	5	有 Yes
	M2390-SX09-D050-B22-Z6-C	50	22	40	8.0	6	有 Yes
	M2390-SX09-D063-B22-Z7-C	63	22	40	8.0	7	有 Yes
	M2390-SX09-D080-B27-Z9-C	80	27	50	8.0	9	有 Yes
	M2390-SX09-D100-B32-Z10-C	100	32	50	8.0	10	有 Yes
	M2390-SX09-D125-B40-Z12-C	125	40	63	8.0	12	有 Yes

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-SX09 Series

	IC	d	S
SX09T3	9.55	3.5	3.97



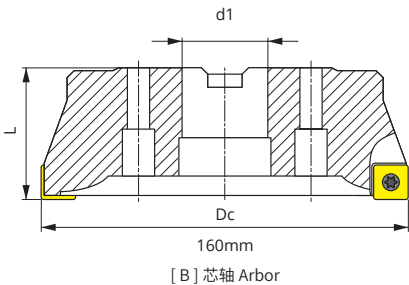
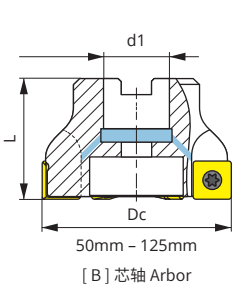
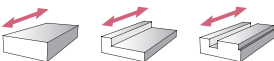
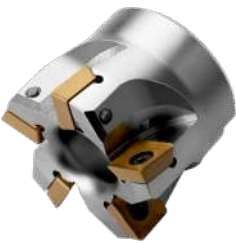
Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-M3	 SXMT09T304SR-M3	0.4	1.3	●	●	●	●	●	●	●	●
-M4	 SXMT09T304SR-M4	0.4	1.3	●	●	●	●	●	●	●	●
-M5	 SXMT09T308SR-M5	0.8	0.9	●	●	●	●	●	●	●	●

附件 Assembly Parts		D20~D32	D40~D125
	刀片锁紧螺钉 Insert Clamping Screw	AF9051(Torx 09IP)-2.0 Nm	
	旗形扳手 Flag Wrench	AF8010-T09IP	
	钥匙形扳手 Key Wrench	AF8020-T09IP	

备件 Accessories		D40	D50~D63	D80	D100	D125
	内六角螺栓 Hexagon Socket Bolt	AF5111	AF5112			
	十字螺栓 Cross Bolt			AF5201	AF5202	AF5203
	十字螺栓扳手 Wrench for Cross Bolt			AF6201	AF6202	AF6203

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-SX12 Series



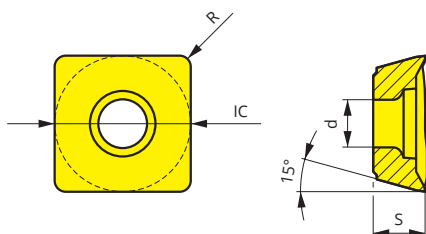
单位 Unit: mm

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
SX1205	M2390-SX12-D050-B22-Z5-C	50	22	40	10	5	有 Yes
	M2390-SX12-D063-B22-Z6-C	63	22	40	10	6	有 Yes
	M2390-SX12-D080-B27-Z6-C	80	27	50	10	6	有 Yes
	M2390-SX12-D100-B32-Z8-C	100	32	50	10	8	有 Yes
	M2390-SX12-D125-B40-Z9-C	125	40	63	10	9	有 Yes
	M2390-SX12-D160-B40-Z12	160	40	63	10	12	有 Yes

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-SX12 Series

	IC	d	S
SX1205	12.7	4.4	5



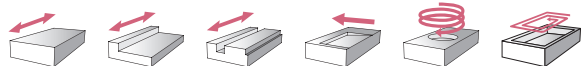
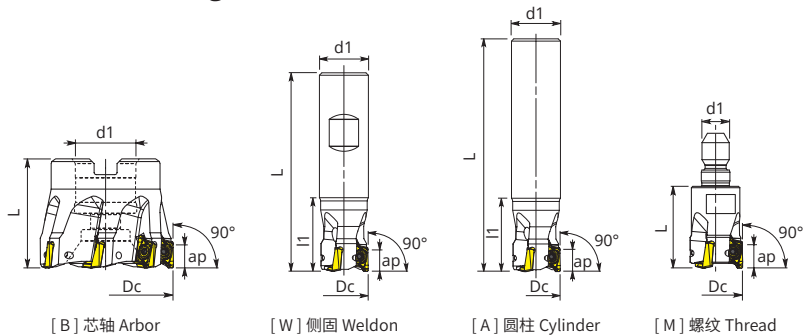
Series	型号 Type	R	BS	P			M		K		S
				ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	 SXMT120508SR-F5	0.8	-	●	●	●	●	●	●	●	●
-M5	 SXMT120508SR-M5	0.8	-	●	●	●	●	●	●	●	●
-R5	 SXMT120508PR-R5	0.8	-	●	●	●	●	●	●	●	●

附件 Assembly Parts		D50~D160
	刀片锁紧螺钉 Insert Clamping Screw	AF9052(Torx 15)-3.0 Nm
	钥匙形扳手 Key Wrench	AF8020-T15

备件 Accessories		D50~D63	D80	D100	D125	D160
	内六角螺栓 Hexagon Socket Bolt	AF5112				AF5114
	十字螺栓 Cross Bolt		AF5201	AF5202	AF5203	
	十字螺栓扳手 Cross Bolt Wrench		AF6201	AF6202	AF6203	
	刀片垫片 Insert Shim		AF5510-SX12	AF5510-SX12	AF5510-SX12	AF5510-SX12
	垫片内六角螺钉 Hexagon Socket Screw for Shim		AF5401	AF5401	AF5401	AF5401
	垫片内六角扳手 Wrench for Hexagon Socket Screw		AF6100-3.5	AF6100-3.5	AF6100-3.5	AF6100-3.5

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-XO10 Series



单位 Unit: mm

Series A	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
XO1003	M2390-XO10-D016-A16-Z2-C	16	16	30	100	9.0	2	有 Yes
	M2390-XO10-D020-A16-Z2-C	20	16	30	100	9.0	2	有 Yes
	M2390-XO10-D020-A20-Z3-C	20	20	30	110	9.0	3	有 Yes
	M2390-XO10-D025-A20-Z3-C	25	20	40	110	9.0	3	有 Yes
	M2390-XO10-D025-A25-Z4-C	25	25	40	120	9.0	4	有 Yes
	M2390-XO10-D032-A25-Z3-C	32	25	50	120	9.0	3	有 Yes
	M2390-XO10-D032-A32-Z5-C	32	32	50	130	9.0	5	有 Yes

Series W	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
XO1003	M2390-XO10-D016-W16-Z2-C	16	16	30	79	9.0	2	有 Yes
	M2390-XO10-D020-W20-Z3-C	20	20	30	81	9.0	3	有 Yes
	M2390-XO10-D025-W25-Z4-C	25	25	40	97	9.0	4	有 Yes
	M2390-XO10-D032-W32-Z5-C	32	32	50	111	9.0	5	有 Yes

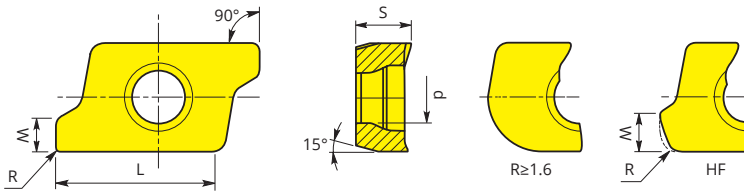
Series M	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
XO1003	M2390-XO10-D016-M08-Z2	16	M8	25	9.0	2	无 No
	M2390-XO10-D020-M10-Z3	20	M10	30	9.0	3	无 No
	M2390-XO10-D025-M12-Z4	25	M12	35	9.0	4	无 No
	M2390-XO10-D032-M16-Z5	32	M16	43	9.0	5	无 No

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
XO1003	M2390-XO10-D040-B16-Z6-C	40	16	40	9.0	6	有 Yes
	M2390-XO10-D050-B22-Z7-C	50	22	40	9.0	7	有 Yes

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-XO10 Series

	d
XO1003	2.9



Series	型号 Type	L	S	R	W	P			M		K		S
						ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	XOMT100304R-F5	9.1	3.4	0.4	1.8		●	●	●	●		●	●
-M4	XOGT1003PER-M4	6.7	3.4	0.8	1.8	●	●	●	●	●	●	●	●
-M4	XOMT100302R-M4	9.1	3.4	0.2	1.8		●	●	●	●		●	●
	XOMT100304R-M4	9.1	3.4	0.4	1.8		●	●	●	●		●	●
	XOMT100308R-M4	9.1	3.4	0.8	1.8	●	●	●	●	●	●	●	●
	XOMT100310R-M4	9.1	3.4	1.0	1.8	●	●	●	●	●	●	●	●
	XOMT100312R-M4	9.1	3.4	1.2	1.8	●	●	●	●	●	●	●	●
	XOMT100316R-M4*	7.8	3.32	1.6	-	●	●	●	●	●	●	●	●
	XOMT100320R-M4*	7.7	3.28	2.0	-		●	●	●	●		●	●
	XOMT100330R-M4*	7.5	3.19	3.0	-		●	●	●	●		●	●
-M5	XOMT100304R-M5	9.1	3.4	0.4	1.6	●	●	●	●	●	●	●	●
	XOMT100308R-M5	9.1	3.4	0.8	1.6	●	●	●	●	●	●	●	●
-R5	XOMT100304R-R5	9.1	3.4	0.4	1.6	●	●	●	●	●	●	●	●
	XOMT100308R-R5	9.1	3.4	0.8	1.6	●	●	●	●	●	●	●	●
-HF	XOMT100310-HF	8.3	3.38	1.0	2.2	●	●	●	●	●	●	●	●
		编程圆角 刃口宽度											

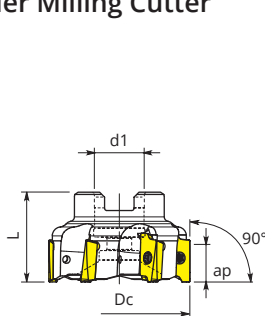
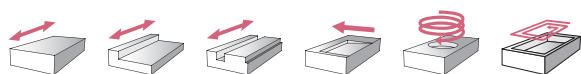
* 刀体必须经过改造: R (刀体) = R (刀片) - 0.5
The tool body must be modified: R (tool body) = R (insert) - 0.5

附件 Assembly Parts		D16~D32	D40~D50
	刀片锁紧螺钉 Insert Clamping Screw	AF9011(Torx 08IP)-1.2 Nm	AF9011(Torx 08IP)-1.2 Nm
	旗形扳手 Flag Wrench	AF8010-T08IP	
	钥匙形扳手 Key Wrench		AF8020-T08IP

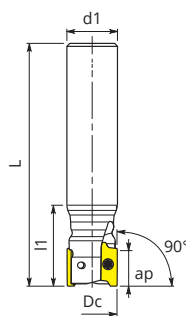
备件 Accessories		D40	D50
	内六角螺栓 Hexagon Socket Bolt	AF5111	AF5112

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

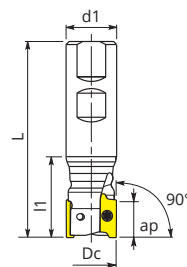
AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-XO16 Series



[B] 芯轴 Arbor



[A] 圆柱 Cylinder



[W] 侧固 Weldon

单位 Unit: mm

Series A	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
XO1606	M2390-XO16-D025-A25-Z2-C	25	25	40	120	15	2	有 Yes
	M2390-XO16-D032-A25-Z2-C	32	25	50	120	15	2	有 Yes
	M2390-XO16-D032-A32-Z3-C	32	32	50	130	15	3	有 Yes
	M2390-XO16-D040-A25-Z3-C	40	25	50	120	15	3	有 Yes
	M2390-XO16-D040-A32-Z4-C	40	32	50	130	15	4	有 Yes

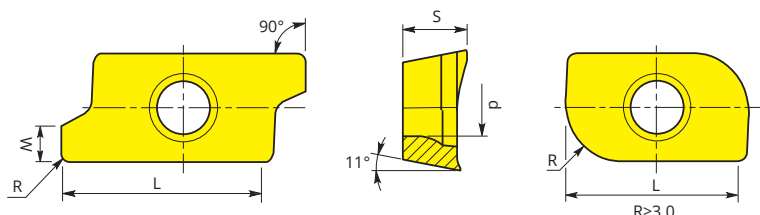
Series W	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
XO1606	M2390-XO16-D025-W25-Z2-C	25	25	40	97	15	2	有 Yes
	M2390-XO16-D032-W32-Z3-C	32	32	50	111	15	3	有 Yes
	M2390-XO16-D040-W32-Z4-C	40	32	50	111	15	4	有 Yes

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
XO1606	M2390-XO16-D040-B16-Z4-C	40	16	40	15	4	有 Yes
	M2390-XO16-D050-B22-Z5-C	50	22	40	15	5	有 Yes
	M2390-XO16-D063-B22-Z6-C	63	22	40	15	6	有 Yes
	M2390-XO16-D080-B27-Z7-C	80	27	50	15	7	有 Yes
	M2390-XO16-D100-B32-Z8-C	100	32	50	15	8	有 Yes
	M2390-XO16-D125-B40-Z9-C	125	40	63	15	9	有 Yes
	M2390-XO16-D160-B40-Z10	160	40	63	15	10	无 No

阿诺 - Loong 龍系列 - 90°主偏角方肩铣刀

AHNO Loong Series-90° Approach Angle Shoulder Milling Cutter
M2390-XO16 Series

	d
XO1606	4.7



Series	型号 Type	L	S	R	W	P			M		K		S
						ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	XOMT160608R-F5	18	6.42	0.8	3.3	●	●	●	●	●	●	●	●
-M4	XOMT160604R-M4	18	6.48	0.4	3.0	●	●	●	●	●	●	●	●
	XOMT160608R-M4	18	6.44	0.8	3.0	●	●	●	●	●	●	●	●
	XOMT160612R-M4	18	6.40	1.2	3.0	●	●	●	●	●	●	●	●
	XOMT160616R-M4	18	6.36	1.6	3.0	●	●	●	●	●	●	●	●
	XOMT160630R-M4*	15.9	6.10	3.0	-	●		●		●	●		●
	XOMT160640R-M4*	15.8	6.03	4.0	-	●		●		●	●		●
	XOMT160650R-M4*	15.7	5.96	5.0	-	●		●		●	●		●
	XOMT160660R-M4*	15.6	5.89	6.0	-	●		●		●	●		●
-R5	XOMT160608R-R5	18	6.40	0.8	2.9	●	●	●	●	●	●	●	●
-R7	XOMT160608R-R7	18	6.40	0.8	2.9	●	●	●	●	●	●	●	●

* 刀体必须经过改造: R(刀体)=R(刀片)-0.5

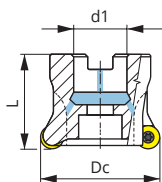
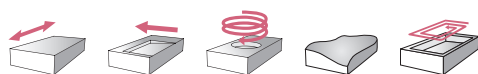
The tool body must be modified: R(tool body) = R(insert) - 0.5

附件 Assembly Parts		D25~D40		D40~D160	
	刀片锁紧螺钉 Insert Clamping Screw	AF9012(Torx 15IP)-3.0 Nm		AF9012(Torx 15IP)-3.0 Nm	
	旗形扳手 Flag Wrench	AF8010-T15IP			
	钥匙形扳手 Key Wrench			AF8020-T15IP	

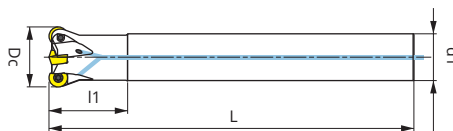
备件 Accessories	D40	D50~D63	D80	D100	D125	D160
内六角螺栓 Hexagon Socket Bolt	AF5111	AF5112	AF5113	—	AF5117	AF5114

阿诺 - Loong 龍系列 - 仿形铣刀

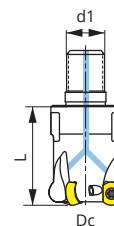
AHNO Loong Series-Profiling Milling Cutter M1300-RC10 Series



[B] 芯轴 Arbor



[A] 圆柱 Cylinder



[M] 螺纹 Thread

单位 Unit: mm

Series A	型号 Type	Dc	d1	l1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
RC10T3	M1300-RC10-D025-A20-Z2-C	25	20	34	170	5.0	2	有 Yes
	M1300-RC10-D025-A20-Z3-C	25	20	34	170	5.0	3	有 Yes
	M1300-RC10-D032-A25-Z3-C	32	25	42	200	5.0	3	有 Yes
	M1300-RC10-D032-A25-Z4-C	32	25	42	200	5.0	4	有 Yes

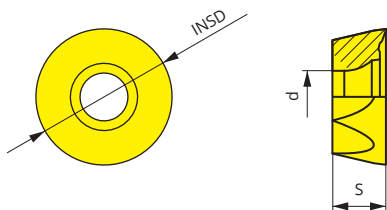
Series M	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
RC10T3	M1300-RC10-D025-M12-Z2-C	25	M12	32	5.0	2	有 Yes
	M1300-RC10-D025-M12-Z3-C	25	M12	32	5.0	3	有 Yes
	M1300-RC10-D032-M16-Z4-C	32	M16	42	5.0	4	有 Yes
	M1300-RC10-D035-M16-Z4-C	35	M16	42	5.0	4	有 Yes

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
RC10T3	M1300-RC10-D040-B16-Z5-C	40	16	40	5.0	5	有 Yes
	M1300-RC10-D050-B22-Z5-C	50	22	40	5.0	5	有 Yes
	M1300-RC10-D050-B22-Z6-C	50	22	40	5.0	6	有 Yes
	M1300-RC10-D052-B22-Z5-C	52	22	40	5.0	5	有 Yes
	M1300-RC10-D052-B22-Z6-C	52	22	40	5.0	6	有 Yes
	M1300-RC10-D063-B22-Z6-C	63	22	40	5.0	6	有 Yes
	M1300-RC10-D063-B22-Z7-C	63	22	40	5.0	7	有 Yes
	M1300-RC10-D066-B27-Z6-C	66	27	50	5.0	6	有 Yes
	M1300-RC10-D066-B27-Z7-C	66	27	50	5.0	7	有 Yes

阿诺 - Loong 龍系列 - 仿形铣刀

AHNO Loong Series-Profiling Milling Cutter
M1300-RC10 Series

	INSD	d	S
RC10T3	10	3.9	3.97



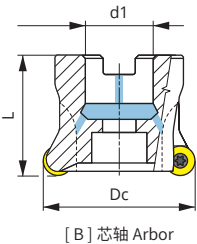
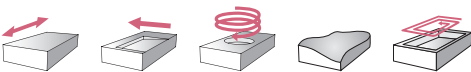
Series	型号 Type	P			M		K		S
		ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	RCMT10T3M05N-F5		●	●	●	●		●	●
-M5	RCMT10T3M05N-M5	●	●	●	●	●	●	●	●
-R5	RCMT10T3M05N-R5	●		●		●	●		●

附件 Assembly Parts		D25~D35	D40~D66
	刀片锁紧螺钉 Insert Clamping Screw	AF9061(Torx 10IP)-3.0 Nm	AF9061(Torx 10IP)-3.0 Nm
	旗形扳手 Flag Wrench	AF8010-T10IP	
	钥匙形扳手 Key Wrench		AF8020-T10IP

备件 Accessories		D40	D50~D63	D66
	内六角螺栓 Hexagon Socket Bolt	AF5111	AF5112	AF5113

阿诺 - Loong 龍系列 - 仿形铣刀

AHNO Loong Series-Profiling Milling Cutter
M1300-RC12 Series



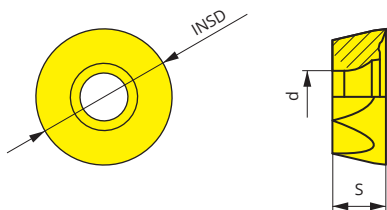
单位 Unit: mm

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
RC1204	M1300-RC12-D040-B16-Z3-C	40	16	40	6.0	3	有 Yes
	M1300-RC12-D050-B22-Z4-C	50	22	40	6.0	4	有 Yes
	M1300-RC12-D052-B22-Z5-C	52	22	40	6.0	5	有 Yes
	M1300-RC12-D063-B22-Z5-C	63	22	40	6.0	5	有 Yes
	M1300-RC12-D066-B27-Z6-C	66	27	50	6.0	6	有 Yes
	M1300-RC12-D080-B27-Z5-C	80	27	50	6.0	5	有 Yes
	M1300-RC12-D100-B32-Z6-C	100	32	50	6.0	6	有 Yes

阿诺 - Loong 龍系列 - 仿形铣刀

AHNO Loong Series-Profiling Milling Cutter
M1300-RC12 Series

	INSD	d	S
RC1204	12	4.4	4.76



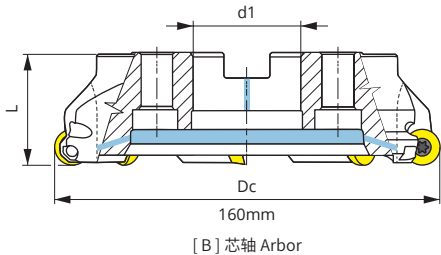
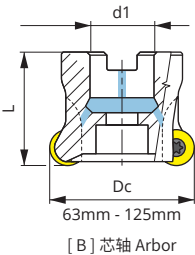
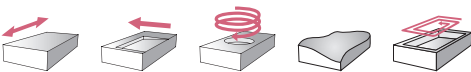
Series	型号 Type	P			M		K		S
		ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	RCMT1204M0EN-F5	●	●	●	●	●	●	●	●
-M5	RCMT1204M0SN-M5	●	●	●	●	●	●	●	●
-R5	RCMT1204M0EN-R5	●	●	●	●	●	●	●	●

附件 Assembly Parts		D40~D100
	刀片锁紧螺钉 Insert Clamping Screw	AF9062(Torx 15IP)-3.0 Nm
	钥匙形扳手 Key Wrench	AF8020-T15IP

备件 Accessories		D40	D50~D63	D66~D80	D100
	内六角螺栓 Hexagon Socket Bolt	AF5116	AF5112	AF5113	
	十字螺栓 Cross Bolt				AF5202
	十字螺栓扳手 Wrench for Cross Bolt				AF6202

阿诺 - Loong 龍系列 - 仿形铣刀

AHNO Loong Series-Profiling Milling Cutter
M1300-RC16 Series



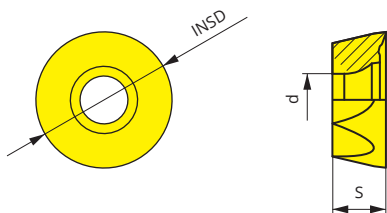
单位 Unit: mm

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
RC1606	M1300-RC16-D063-B22-Z4-C	63	22	50	8.0	4	有 Yes
	M1300-RC16-D066-B27-Z5-C	66	27	50	8.0	5	有 Yes
	M1300-RC16-D080-B27-Z5-C	80	27	50	8.0	5	有 Yes
	M1300-RC16-D100-B32-Z6-C	100	32	50	8.0	6	有 Yes
	M1300-RC16-D125-B40-Z7-C	125	40	63	8.0	7	有 Yes
	M1300-RC16-D160-B40-Z8-C	160	40	63	8.0	8	有 Yes

阿诺 - Loong 龍系列 - 仿形铣刀

AHNO Loong Series-Profiling Milling Cutter
M1300-RC16 Series

	INSD	d	S
RC1606	16	5.5	6.35



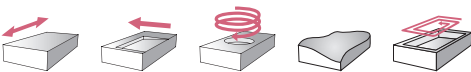
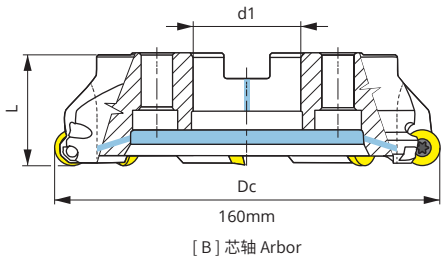
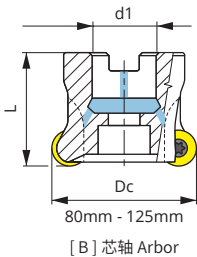
Series	型号 Type	P			M		K		S
		ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	RCMT1606M0EN-F5	●	●	●	●	●	●	●	●
-M5	RCMT1606M0SN-M5	●	●	●	●	●	●	●	●
-R5	RCMT1606M0SN-R5	●	●	●	●	●	●	●	●

附件 Assembly Parts		D63~D160
	刀片锁紧螺钉 Insert Clamping Screw	AF9063(Torx 20IP)-5.0 Nm
	钥匙形扳手 Key-shaped Wrench	AF8020-T20IP

备件 Accessories		D63	D66~D80	D100	D125	D160
	内六角螺栓 Hexagon Socket Bolt	AF5112	AF5113		AF5117	AF5114
	十字螺栓 Cross Bolt			AF5202		
	十字螺栓扳手 Wrench for Cross Bolt			AF6202		

阿诺 - Loong 龍系列 - 仿形铣刀

AHNO Loong Series-Profiling Milling Cutter
M1300-RC20 Series



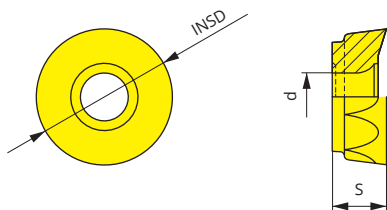
单位 Unit: mm

Series B	型号 Type	Dc	d1	L	apmax	齿数 Number of Teeth	内冷 Internal Coolant
RC2006	M1300-RC20-D080-B27-Z4-C	80	27	50	10	4	有 Yes
	M1300-RC20-D100-B32-Z5-C	100	32	50	10	5	有 Yes
	M1300-RC20-D125-B40-Z6-C	125	40	63	10	6	有 Yes
	M1300-RC20-D160-B40-Z7-C	160	40	63	10	7	有 Yes

阿诺 - Loong 龍系列 - 仿形铣刀

AHNO Loong Series-Profiling Milling Cutter
M1300-RC20 Series

	INSD	d	S
RC2006	20	6.5	6.35



Series	型号 Type	P			M		K		S
		ACP25A	APP25A	APU35A	APP25A	APU35A	ACP25A	APP25A	APU35A
-F5	RCMT2006M05N-F5	●	●	●	●	●	●	●	●
-M5	RCMT2006M05N-M5	●	●	●	●	●	●	●	●
-R5	RCMT2006M05N-R5	●		●		●	●		●

附件 Assembly Parts		D80~D160
	刀片锁紧螺钉 Insert Clamping Screw	AF9064 (Torx 25IP)-7.5 Nm
	T 形扳手 T-shaped Wrench	AF8040-T25IP

备件 Accessories		D80	D100	D125	D160
	内六角螺栓 Hexagon Socket Bolt	AF5113		AF5117	AF5114
	十字螺栓 Cross Bolt		AF5202		
	十字螺栓扳手 Wrench for Cross Bolt		AF6202		

阿诺 - Loong 龍系列 - 切削参数

AHNO Loong Series-Cutting Parameters

HN06 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)			
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5	W5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.24	0.27	0.32	0.12
		640-1010	190-300	160~250	150~240	125~225	0.2	0.24	0.27	0.12
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.2	0.24	0.27	0.12
		950-1200	280-355	120~160	100~150	80~120	0.18	0.2	0.24	0.1
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.18	0.2	0.24	0.1
	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.18	0.2	0.24	0.1
		680	200		120~160	100~125	0.18	0.2	0.24	0.1
K	奥氏体不锈钢 Austenitic Stainless Steel	1010	300		80~120	75~100	0.15	0.18	0.2	0.1
	沉淀硬化不锈钢 PH Stainless Steel									
S	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.27	0.3	0.36	0.12
		400-700	155-265	125~225	120~200		0.24	0.27	0.32	0.12
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.2	0.24	0.27	0.12
N	蠕墨铸铁 Compacted Graphite Iron									
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.12	0.15	0.18	0.1
		1260-1400	375-410			30~50	0.12	0.15	0.18	0.1
H	钛合金 Titanium Alloy									
	铝合金 Aluminium Alloy	260-450	75-130							
H	淬硬钢 Hardened Steel	-	HRC50-60							
	淬硬铸铁 Hardened Cast Iron	-	HRC55							

HN09 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)				
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F1	F5	M5	R5	W5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.24	0.27	0.32	0.36	0.12
		640-1010	190-300	160~250	150~240	125~225	0.2	0.24	0.27	0.3	0.12
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.2	0.24	0.27	0.3	0.12
		950-1200	280-355	120~160	100~150	80~120	0.18	0.2	0.24	0.27	0.1
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.18	0.2	0.24	0.27	0.1
	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.18	0.2	0.24	0.27	0.1
		680	200		120~160	100~125	0.18	0.2	0.24	0.27	0.1
K	奥氏体不锈钢 Austenitic Stainless Steel	1010	300		80~120	75~100	0.15	0.18	0.2	0.24	0.1
	沉淀硬化不锈钢 PH Stainless Steel										
S	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.27	0.3	0.36	0.4	0.12
		400-700	155-265	125~225	120~200		0.24	0.27	0.32	0.36	0.12
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.2	0.24	0.27	0.3	0.12
N	蠕墨铸铁 Compacted Graphite Iron										
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.12	0.15	0.18	0.2	0.1
		1260-1400	375-410			30~50	0.12	0.15	0.18	0.2	0.1
H	钛合金 Titanium Alloy										
	铝合金 Aluminium Alloy	260-450	75-130								
H	淬硬钢 Hardened Steel	-	HRC50-60								
	淬硬铸铁 Hardened Cast Iron	-	HRC55								

阿诺 - Loong 龍系列 - 切削参数 AHNO Loong Series-Cutting Parameters

ON06 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)			
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5	W5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.24	0.27	0.32	0.1
		640-1010	190-300	160~250	150~240	125~225	0.2	0.24	0.27	0.1
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.2	0.24	0.27	0.1
		950-1200	280-355	120~160	100~150	80~120	0.18	0.2	0.24	0.08
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.18	0.2	0.24	0.08
		780	230		100~150	90~120	0.18	0.2	0.24	0.08
	双相不锈钢 Duplex Stainless Steel	680	200		120~160	100~125	0.18	0.2	0.24	0.08
		1010	300		80~120	75~100	0.16	0.18	0.2	0.08
K	奥氏体不锈钢 Austenitic Stainless Steel	200-350	180-245	180~320	160~240		0.27	0.3	0.36	0.1
		400-700	155-265	125~225	120~200		0.24	0.27	0.32	0.1
	沉淀硬化不锈钢 PH Stainless Steel	400	230	120~160	100~150		0.2	0.24	0.27	0.1
		840-1180	250-350			40~60	0.15	0.16	0.18	0.08
S	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	1260-1400	375-410			30~50	0.15	0.16	0.18	0.08
		260-450	75-130							
	钛合金 Titanium Alloy	-	HRC50-60							
		-	HRC55							
N	铝合金 Aluminium Alloy									
	淬硬钢 Hardened Steel									
H	淬硬铸铁 Hardened Cast Iron									

SN17 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)	
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.32	0.36
		640-1010	190-300	160~250	150~240	125~225	0.27	0.3
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.27	0.3
		950-1200	280-355	120~160	100~150	80~120	0.24	0.27
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.24	0.27
		780	230		100~150	90~120	0.24	0.27
	双相不锈钢 Duplex Stainless Steel	680	200		120~160	100~125	0.24	0.27
		1010	300		80~120	75~100	0.2	0.24
K	奥氏体不锈钢 Austenitic Stainless Steel	200-350	180-245	180~320	160~240		0.36	0.4
		400-700	155-265	125~225	120~200		0.32	0.36
	沉淀硬化不锈钢 PH Stainless Steel	400	230	120~160	100~150		0.27	0.3
		840-1180	250-350			40~60	0.18	0.2
S	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	1260-1400	375-410			30~50	0.18	0.2
		260-450	75-130					
	钛合金 Titanium Alloy	-	HRC50-60					
		-	HRC55					
N	铝合金 Aluminium Alloy							
	淬硬钢 Hardened Steel							
H	淬硬铸铁 Hardened Cast Iron							

阿诺 - Loong 龍系列 - 切削参数

AHNO Loong Series-Cutting Parameters

TN11 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.24	0.27	
		640-1010	190-300	160~250	150~240	125~225	0.2	0.24	
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.2	0.24	
		950-1200	280-355	120~160	100~150	80~120	0.18	0.2	
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.18	0.2	
	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.18	0.2	
	奥氏体不锈钢 Austenitic Stainless Steel	680	200		120~160	100~125	0.18	0.2	
K	沉淀硬化不锈钢 PH Stainless Steel	1010	300		80~120	75~100	0.15	0.18	
	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.27	0.3	
	球墨铸铁 Nodular Cast Iron	400-700	155-265	125~225	120~200		0.24	0.27	
	蠕墨铸铁 Compacted Graphite Iron	400	230	120~160	100~150		0.2	0.24	
S	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.12	0.15	
	钛合金 Titanium Alloy	1260-1400	375-410			30~50	0.12	0.15	
N	铝合金 Aluminium Alloy	260-450	75-130						
H	淬硬钢 Hardened Steel	-	HRC50-60						
	淬硬铸铁 Hardened Cast Iron	-	HRC55						

TN17 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.27	0.32	
		640-1010	190-300	160~250	150~240	125~225	0.24	0.27	
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.24	0.27	
		950-1200	280-355	120~160	100~150	80~120	0.2	0.24	
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.2	0.24	
	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.2	0.24	
	奥氏体不锈钢 Austenitic Stainless Steel	680	200		120~160	100~125	0.2	0.24	
K	沉淀硬化不锈钢 PH Stainless Steel	1010	300		80~120	75~100	0.18	0.2	
	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.3	0.36	
	球墨铸铁 Nodular Cast Iron	400-700	155-265	125~225	120~200		0.27	0.32	
	蠕墨铸铁 Compacted Graphite Iron	400	230	120~160	100~150		0.24	0.27	
S	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.15	0.18	
	钛合金 Titanium Alloy	1260-1400	375-410			30~50	0.15	0.18	
N	铝合金 Aluminium Alloy	260-450	75-130						
H	淬硬钢 Hardened Steel	-	HRC50-60						
	淬硬铸铁 Hardened Cast Iron	-	HRC55						

阿诺 - Loong 龍系列 - 切削参数 AHNO Loong Series-Cutting Parameters

SX09 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	M3	M4	M5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.2	0.24	0.27
		640-1010	190-300	160~250	150~240	125~225	0.18	0.2	0.24
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.18	0.2	0.24
		950-1200	280-355	120~160	100~150	80~120	0.16	0.18	0.2
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.16	0.18	0.2
		780	230		100~150	90~120	0.16	0.18	0.2
	双相不锈钢 Duplex Stainless Steel	680	200		120~160	100~125	0.16	0.18	0.2
		1010	300		80~120	75~100	0.12	0.15	0.18
K	奥氏体不锈钢 Austenitic Stainless Steel	200-350	180-245	180~320	160~240		0.24	0.27	0.3
		400-700	155-265	125~225	120~200		0.2	0.24	0.27
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.18	0.2	0.24
		840-1180	250-350			40~60	0.1	0.12	0.15
S	蠕墨铸铁 Compacted Graphite Iron	1260-1400	375-410			30~50	0.1	0.12	0.15
		260-450	75-130						
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	-	HRC50-60						
		-	HRC55						
N	钛合金 Titanium Alloy								
	铝合金 Aluminium Alloy								
H	淬硬钢 Hardened Steel								
	淬硬铸铁 Hardened Cast Iron								

SX12 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.2	0.24	0.27
		640-1010	190-300	160~250	150~240	125~225	0.18	0.2	0.24
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.18	0.2	0.24
		950-1200	280-355	120~160	100~150	80~120	0.16	0.18	0.2
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.16	0.18	0.2
		780	230		100~150	90~120	0.16	0.18	0.2
	双相不锈钢 Duplex Stainless Steel	680	200		120~160	100~125	0.16	0.18	0.2
		1010	300		80~120	75~100	0.12	0.15	0.18
K	奥氏体不锈钢 Austenitic Stainless Steel	200-350	180-245	180~320	160~240		0.24	0.27	0.3
		400-700	155-265	125~225	120~200		0.2	0.24	0.27
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.18	0.2	0.24
		840-1180	250-350			40~60	0.1	0.12	0.15
S	蠕墨铸铁 Compacted Graphite Iron	1260-1400	375-410			30~50	0.1	0.12	0.15
		260-450	75-130						
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	-	HRC50-60						
		-	HRC55						
N	钛合金 Titanium Alloy								
	铝合金 Aluminium Alloy								
H	淬硬钢 Hardened Steel								
	淬硬铸铁 Hardened Cast Iron								

阿诺 - Loong 龍系列 - 切削参数

AHNO Loong Series-Cutting Parameters

XO10 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)				
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M4	M5	R5	HF
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.2	0.24	0.24	0.27	0.8
		640-1010	190-300	160~250	150~240	125~225	0.18	0.2	0.2	0.24	0.75
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.18	0.2	0.2	0.24	0.75
		950-1200	280-355	120~160	100~150	80~120	0.16	0.18	0.18	0.2	0.6
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.16	0.18	0.18	0.2	0.6
	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.16	0.18	0.18	0.2	0.6
		680	200		120~160	100~125	0.16	0.18	0.18	0.2	0.6
K	奥氏体不锈钢 Austenitic Stainless Steel	1010	300		80~120	75~100	0.12	0.15	0.15	0.18	0.5
	沉淀硬化不锈钢 PH Stainless Steel										
	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.24	0.27	0.27	0.3	1.0
	球墨铸铁 Nodular Cast Iron	400-700	155-265	125~225	120~200		0.2	0.24	0.24	0.27	0.8
S	蠕墨铸铁 Compacted Graphite Iron	400	230	120~160	100~150		0.18	0.2	0.2	0.24	0.75
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.1	0.12	0.12	0.15	0.45
	钛合金 Titanium Alloy	1260-1400	375-410			30~50	0.1	0.12	0.12	0.15	0.45
	铝合金 Aluminium Alloy	260-450	75-130								
H	淬硬钢 Hardened Steel	-	HRC50-60								
	淬硬铸铁 Hardened Cast Iron	-	HRC55								

XO16 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)			
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M4	R5	R7
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.2	0.24	0.27	0.27
		640-1010	190-300	160~250	150~240	125~225	0.18	0.2	0.24	0.24
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.18	0.2	0.24	0.24
		高合金钢 High-Alloyed Steel	950-1200	280-355	120~160	100~150	80~120	0.16	0.18	0.2
		1200-1400	355-415	80~100	75~90	60~75	0.16	0.18	0.2	0.2
M	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.16	0.18	0.2	0.2
	奥氏体不锈钢 Austenitic Stainless Steel	680	200		120~160	100~125	0.16	0.18	0.2	0.2
	沉淀硬化不锈钢 PH Stainless Steel	1010	300		80~120	75~100	0.12	0.15	0.18	0.18
K	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.24	0.27	0.3	0.3
	球墨铸铁 Nodular Cast Iron	400-700	155-265	125~225	120~200		0.2	0.24	0.27	0.27
	蠕墨铸铁 Compacted Graphite Iron	400	230	120~160	100~150		0.18	0.2	0.24	0.24
S	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.1	0.12	0.15	0.15
	钛合金 Titanium Alloy	1260-1400	375-410			30~50	0.1	0.12	0.15	0.15
N	铝合金 Aluminium Alloy	260-450	75-130							
H	淬硬钢 Hardened Steel	-	HRC50-60							
	淬硬铸铁 Hardened Cast Iron	-	HRC55							

阿诺 - Loong 龍系列 - 切削参数 AHNO Loong Series-Cutting Parameters

RC10 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.2~0.75	0.24~0.8	0.27~1.0
		640-1010	190-300	160~250	150~240	125~225	0.18~0.6	0.2~0.75	0.24~0.8
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.18~0.6	0.2~0.75	0.24~0.8
		950-1200	280-355	120~160	100~150	80~120	0.16~0.5	0.18~0.6	0.2~0.75
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.16~0.5	0.18~0.6	0.2~0.75
		780	230		100~150	90~120	0.16~0.5	0.18~0.6	0.2~0.75
	双相不锈钢 Duplex Stainless Steel	680	200		120~160	100~125	0.16~0.5	0.18~0.6	0.2~0.75
		1010	300		80~120	75~100	0.12~0.45	0.15~0.5	0.18~0.6
K	奥氏体不锈钢 Austenitic Stainless Steel								
	沉淀硬化不锈钢 PH Stainless Steel								
S	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.24~0.8	0.27~1.0	0.3~1.2
		400-700	155-265	125~225	120~200		0.2~0.75	0.24~0.8	0.27~1.0
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.18~0.6	0.2~0.75	0.24~0.8
N	蠕墨铸铁 Compacted Graphite Iron								
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.1~0.4	0.12~0.45	0.15~0.5
		1260-1400	375-410			30~50	0.1~0.4	0.12~0.45	0.15~0.5
H	钛合金 Titanium Alloy								
	铝合金 Aluminium Alloy	260-450	75-130						
H	淬硬钢 Hardened Steel	-	HRC50-60						
	淬硬铸铁 Hardened Cast Iron	-	HRC55						

RC12 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.2~0.75	0.24~0.8	0.27~1.0
		640-1010	190-300	160~250	150~240	125~225	0.18~0.6	0.2~0.75	0.24~0.8
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.18~0.6	0.2~0.75	0.24~0.8
		950-1200	280-355	120~160	100~150	80~120	0.16~0.5	0.18~0.6	0.2~0.75
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.16~0.5	0.18~0.6	0.2~0.75
		780	230		100~150	90~120	0.16~0.5	0.18~0.6	0.2~0.75
	双相不锈钢 Duplex Stainless Steel	680	200		120~160	100~125	0.16~0.5	0.18~0.6	0.2~0.75
		1010	300		80~120	75~100	0.12~0.45	0.15~0.5	0.18~0.6
K	奥氏体不锈钢 Austenitic Stainless Steel								
	沉淀硬化不锈钢 PH Stainless Steel								
S	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.24~0.8	0.27~1.0	0.3~1.2
		400-700	155-265	125~225	120~200		0.2~0.75	0.24~0.8	0.27~1.0
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.18~0.6	0.2~0.75	0.24~0.8
N	蠕墨铸铁 Compacted Graphite Iron								
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.1~0.4	0.12~0.45	0.15~0.5
		1260-1400	375-410			30~50	0.1~0.4	0.12~0.45	0.15~0.5
H	钛合金 Titanium Alloy								
	铝合金 Aluminium Alloy	260-450	75-130						
H	淬硬钢 Hardened Steel	-	HRC50-60						
	淬硬铸铁 Hardened Cast Iron	-	HRC55						

阿诺 - Loong 龍系列 - 切削参数

AHNO Loong Series-Cutting Parameters

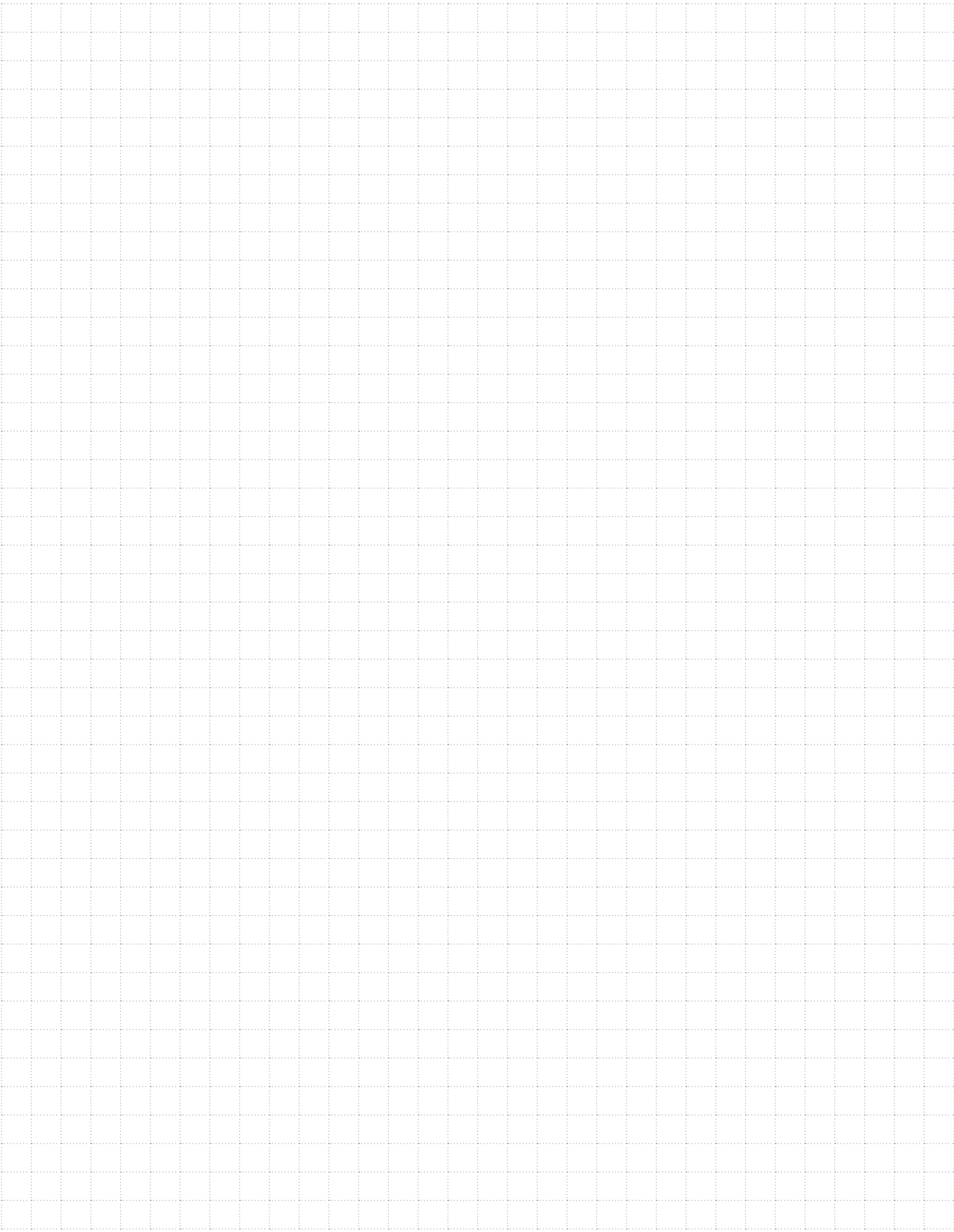
RC16 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.24~0.8	0.27~1.0	0.32~1.2
		640-1010	190-300	160~250	150~240	125~225	0.2~0.75	0.24~0.8	0.27~1.0
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.2~0.75	0.24~0.8	0.27~1.0
		950-1200	280-355	120~160	100~150	80~120	0.18~0.6	0.2~0.75	0.24~0.8
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.18~0.6	0.2~0.75	0.24~0.8
	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.18~0.6	0.2~0.75	0.24~0.8
		680	200		120~160	100~125	0.18~0.6	0.2~0.75	0.24~0.8
K	奥氏体不锈钢 Austenitic Stainless Steel	1010	300		80~120	75~100	0.15~0.5	0.18~0.6	0.2~0.75
	沉淀硬化不锈钢 PH Stainless Steel								
S	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.27~1.0	0.3~1.2	0.36~1.5
		400-700	155-265	125~225	120~200		0.24~0.8	0.27~1.0	0.32~1.2
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.2~0.75	0.24~0.8	0.27~1.0
N	蠕墨铸铁 Compacted Graphite Iron								
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.12~0.45	0.15~0.5	0.18~0.6
		1260-1400	375-410			30~50	0.12~0.45	0.15~0.5	0.18~0.6
H	钛合金 Titanium Alloy								
	铝合金 Aluminium Alloy	260-450	75-130						
H	淬硬钢 Hardened Steel	-	HRC50-60						
	淬硬铸铁 Hardened Cast Iron	-	HRC55						

RC20 Series

切削参数 Cutting Parameters				Vc (m/min)			fz(mm/z)		
ISO	材料组 Material Group	抗拉强度 Tensile Strength (N/mm²)	布氏硬度 (HB)	ACP25A	APP25A	APU35A	F5	M5	R5
P	非合金钢 Non-Alloy Steel	430	125	225~270	180~270	160~240	0.24~0.8	0.27~1.0	0.32~1.2
		640-1010	190-300	160~250	150~240	125~225	0.2~0.75	0.24~0.8	0.27~1.0
	低合金钢 Low-Alloyed Steel	700-950	200-280	150~240	125~225	100~200	0.2~0.75	0.24~0.8	0.27~1.0
		950-1200	280-355	120~160	100~150	80~120	0.18~0.6	0.2~0.75	0.24~0.8
M	高合金钢 High-Alloyed Steel	1200-1400	355-415	80~100	75~90	60~75	0.18~0.6	0.2~0.75	0.24~0.8
	双相不锈钢 Duplex Stainless Steel	780	230		100~150	90~120	0.18~0.6	0.2~0.75	0.24~0.8
		680	200		120~160	100~125	0.18~0.6	0.2~0.75	0.24~0.8
K	奥氏体不锈钢 Austenitic Stainless Steel	1010	300		80~120	75~100	0.15~0.5	0.18~0.6	0.2~0.75
	沉淀硬化不锈钢 PH Stainless Steel								
S	灰口铸铁 Grey Cast Iron	200-350	180-245	180~320	160~240		0.27~1.0	0.3~1.2	0.36~1.5
		400-700	155-265	125~225	120~200		0.24~0.8	0.27~1.0	0.32~1.2
	球墨铸铁 Nodular Cast Iron	400	230	120~160	100~150		0.2~0.75	0.24~0.8	0.27~1.0
N	蠕墨铸铁 Compacted Graphite Iron								
	镍基 / 钴基合金 Nickel Based/Cobalt Based Alloy	840-1180	250-350			40~60	0.12~0.45	0.15~0.5	0.18~0.6
		1260-1400	375-410			30~50	0.12~0.45	0.15~0.5	0.18~0.6
H	钛合金 Titanium Alloy								
	铝合金 Aluminium Alloy	260-450	75-130						
H	淬硬钢 Hardened Steel	-	HRC50-60						
	淬硬铸铁 Hardened Cast Iron	-	HRC55						





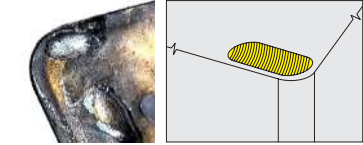
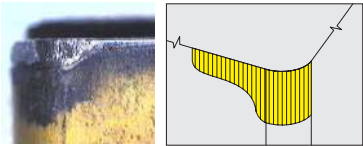
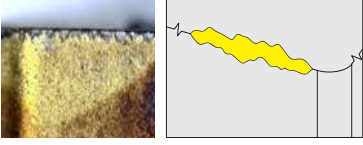
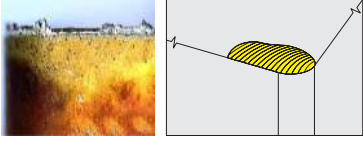
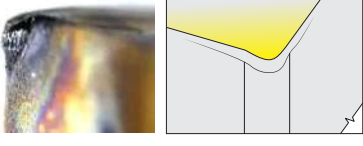
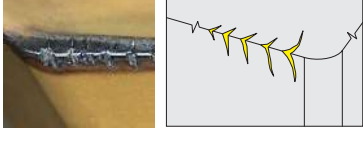
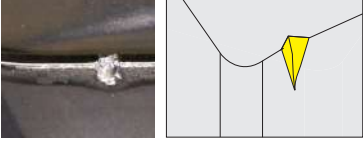
TECHNICAL INFORMATION

技术信息

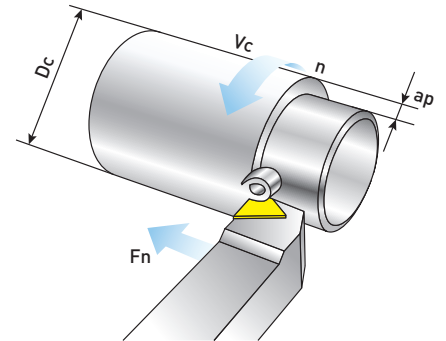


刀片失效形式与分析

Insert Wear Patterns and Analysis

失效类型 Types of Wear	表现形式 Patterns	原因分析 Reason Analysis	改进措施 Solutions
月牙洼磨损 Crater Wear		刀片前刀面有凹陷状磨损 Crater-shaped cavities on the rake face of the indexable insert 切屑与刀片前刀面的接触导致扩散磨损； 刀片材质过软； 线速度过高； The chip gets in touch with rake face of insert brings the wear Insert hardness is not enough Cutting speed is too high	选择更耐磨材质（Al ₂ O ₃ 含量更高的涂层）刀片； 降低线速度； 使用更开放槽型； 优化冷却； - Reduce the cutting speed - Use a geometry with a larger rake angle - Use a cutting material that is more wear-resistant with high Al ₂ O ₃ content - Optimizing coolant
后刀面磨损 Flank Face Wear		主要位于刀片后刀面的磨损 Abrasion on the flank face of the insert 刀片材质过软； 切削线速度过高； 进给量太小； Insert hardness is not enough Cutting speed is too high The feed is too low	选择更耐磨材质的刀片； 降低线速度； 提高进给量； 优化冷却； - Use a more wear-resistant grade - Increase the feed - Reduce the cutting speed - Optimizing cooling
崩刀 Fractures		刀片切削刃或刀尖处崩口 Fractures along the cutting edge 刀片材料过硬； 进给量太大； 刀片槽型刀口不够稳固；刀杆、刀柄刚性不足； Insert toughness is not enough The feed is too high The cutting edge is too sharp The rigidity of tool holder is not good enough	使用韧性更好的刀片； 减小进给量； 使用更稳固的槽型； 加强刀杆结构，减少悬长； - Use tougher grades - Use a more stable tool and reduce the projection length - Use more stable geometries - Reduce the feed
积屑瘤 Built-up on Edge		刀片前刀面沿切削刃有工件材料粘结堆积 Adhesion of material along the cutting edge on the rake face 切削线速度低； 刀片刃口不够锋利； 刀具材料或涂层不合适； Cutting speed is too low The cutting edge is not sharp enough Inappropriate insert material or coating	提高切削线速度； 使用更加锋利的槽型； 选择亲和力小的刀具材料或涂层； 优化冷却； - Increase the cutting speed - Use sharper geometry with a larger rake angle - Optimizing coolant - Use a better insert material or coating
塑性变形 Plastic Deformation		刀尖或者切削刃塌陷变形 Deformation of the cutting edge due to thermal overload and high cutting forces 刀具材料过软； 切削速度过高； 切削深度，进给太大； 切削温度过高； Insert hardness is not enough Cutting speed is too high Cutting depth/feed is too high High temperature	使用更耐磨材质的刀具； 降低切削速度； 减小切削深度，进给量； 优化冷却； - Use a more wear-resistant grade - Reduce feed - Reduce the cutting depth and the cutting speed - Optimizing coolant
热龟裂 Comb Crack		刀片切削刃上有梳齿状龟裂 Multiple cracks running vertical to the cutting edge due to thermal shock 切削热引起的膨胀和收缩波动导致； 刀具材料过硬； Heat fluctuation Insert toughness is not enough	采用干式切削或者精密充分的冷却； 使用韧性更好的刀具材质； - Possibly cutting without coolant or precision coolant - Use a tougher insert grade
沟槽磨损 Notch Wear		刀片切削刃上有缺口状磨损 Notching around the cutting depth on the insert 加工硬材料； 工件表面有氧化皮； Hard materials process Oxide layer face of workpiece	选择较小的主偏角； 使用变化的切深； 使用韧性更好的刀具材质； 使用更稳固的槽型； 优化冷却； - Use tools with a preceding cutting edge ($\kappa = 45^\circ / 75^\circ$) - Vary the cutting depth - Use a tougher grade - Use a more open geometry - Optimizing coolant

车削计算公式 Turning Formulas



公式 Formulas

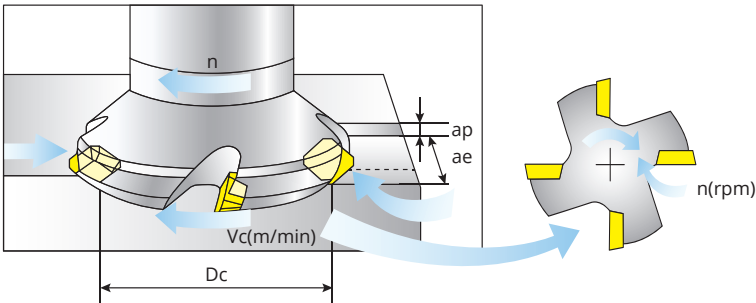
切削速度 Cutting Speed	$V_c = (D_c \times \pi \times n) \div 1000$
转速 Spindle Speed	$n = (V_c \times 1000) \div (D_c \times \pi)$
进给速度 Feed Rate	$V_f = n \times F_n$
每转进给量 Feed per Revolution	$F_n = V_f \div n$
金属去除率 Metal Removal Rate	$Q = V_c \times V_f \times A_p$
加工时间 Machining Time	$T = L \div V_f$

释义 Definition

n	主轴转速 Spindle Speed	rpm
Vc	切削速度 Cutting Speed	m/min
Vf	进给速度 Feed Rate	mm/min
Fn	每转进给量 Feed per Revolution	mm
Dc	零件加工直径 Workpiece Diameter	mm
ap	零件切深 Cutting Depth	mm
Q	金属去除率 Metal Removal Rate	cm ³ /min
L	零件加工长度 Cutting Length	mm
T	加工时间 Machining Time	min
π	圆周率 3.14 π 3.14	

铣削计算公式

Milling Formulas



公式

Formulas

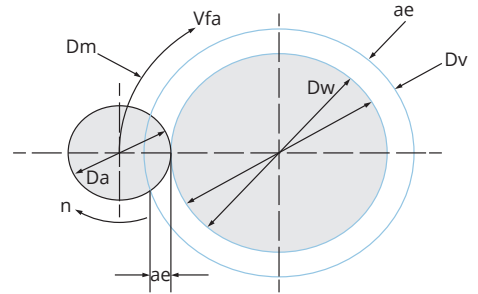
切削速度 Cutting Speed	$V_c = (D_c \times \pi \times n) \div 1000$
转速 Spindle Speed	$n = (V_c \times 1000) \div (D_c \times \pi)$
进给速度 Feed Rate	$V_f = f_z \times n \times Z$
每齿进给量 Feed per Revolution	$f_z = V_f \div (n \times Z)$
金属去除率 Metal Removal Rate	$Q = (a_p \times a_e \times V_f) \div 1000$
加工时间 Machining Time	$T = L \div V_f$

释义

Definition

n	主轴转速 Spindle Speed	rpm
Vc	切削速度 Cutting Speed	m/min
Vf	进给速度 Feed Rate	mm/min
fz	每齿进给量 Feed per Tooth	mm
Dc	铣刀直径 Milling Diameter	mm
Z	铣刀齿数 Number of Milling Teeth	
ap	切深 Cutting Depth	mm
ae	切宽 Cutting Width	mm
Q	金属去除率 Metal Removal Rate	cm ³ /min
L	零件铣削长度 Cutting Length	mm
T	加工时间 Machining Time	min
π	圆周率 3.14 π 3.14	

铣削计算公式 Milling Formulas



外圆插补铣切削比例 Cutting Ratio of Cylindrical Interpolation

外部轮廓进给速度
Feed Speed of Cylindrical
Interpolation

$$V_{fa} = \left(1 + \frac{D_c}{D_w + a_e} \right) \times V_f \quad [\text{mm/min}]$$

圆周插补铣加工时间
Cutting Time of Helix
Interpolation

$$T_{rev} = \frac{D_m \times \pi}{n \times f_z \times z} \quad [\text{min}] \quad T_{rev} = \frac{(D_w + D_a) D_a \times \pi^2 \times 60}{V_c \times f_z \times z \times 1000} \quad [\text{s}]$$

圆周插补铣切削宽度
Cutting Width of Helix
Interpolation

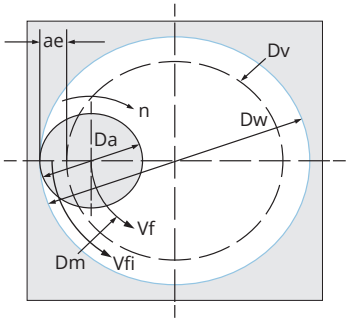
$$a_e = \frac{(D_v^2 - D_w^2)}{4(D_w + D_a)} \quad [\text{mm}]$$

外部轮廓 External Contour

Vfa	刀具中心轨迹进给速度 Feed Speed of Tool Center Path	mm/min
Da	铣刀外径 Outside Diameter of Milling	m/min
Dm	中心轨迹直径 Center Track Diameter	mm/min
Dv	工件毛坯直径 The Blank Diameter of the Workpiece	mm
Dw	工件成品直径 Finished Diameter of Workpiece	mm
ae	切削宽度 Cutting Width	mm
n	转速 Rotational Speed	mm
fz	每齿进给量 Feed per Tooth	rpm
z	齿数 Number of Teeth	mm

铣削计算公式

Milling Formulas



插补铣孔的切削比例

Interpolation Cutting Ratio of Hole Milling

内部轮廓进给速度 Internal Profile Feed Speed	$V_{fi} = \left(1 - \frac{D_c}{D_w}\right) \times V_f \quad [\text{mm/min}]$		
圆周插补铣加工时间 Cutting Time of Helix Interpolation	$T_{rev} = \frac{D_m \times \pi}{n \times f_z \times z} \quad [\text{min}]$	$T_{rev} = \frac{(D_w - D_a) D_a \times \pi^2 \times 60}{V_c \times f_z \times z \times 1000} \quad [\text{s}]$	
圆周插补铣切削宽度 Cutting Width of Helix Interpolation	$ae = \frac{(D^2_w - D^2_v)}{4 (D_w - D_a)} \quad [\text{mm}]$		

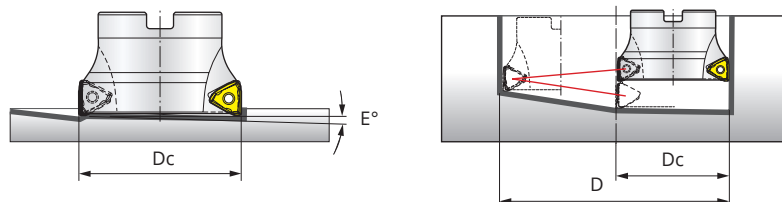
内部轮廓

Internal Contour

Vf	进给速度 Feed Rate	mm/min
Vfi	刀具中心轨迹进给速度 Feed Speed of Tool Center Path	mm/min
Da	铣刀外径 Outside Diameter of Milling	mm
Dm	中心轨迹直径 Center Track Diameter	mm
Dv	工件毛还直径 The Blank Diameter of the Workpiece	mm
Dw	工件成品直径 Finished Diameter of Workpiece	mm
ae	加工余量 Machining Allowance	mm
n	转速 Rotational Speed	rpm
fz	每齿进给量 Feed per Tooth	mm
Z	齿数 Number of Teeth	
Trev	圆周插补铣加工时间 Circumferential Interpolation Milling Time	s

AHNO 铣刀技术应用

AHNO Milling Technology Application M2390-TN11



坡铣信息

Ramp Milling Information

铣刀切削直径 Dc Milling Diameter	最大坡铣角度 E max Maximum Ramp Milling Angle	最大坡铣深度 ap max Maximum Ramp Milling Depth
20	1.6	2.7
22	1.2	2.0
25	1.0	1.7
30	0.9	1.45
32	0.8	1.3
35	0.65	1.0
40	0.6	0.9
50	0.5	0.7
63	0.4	0.5

螺旋插补铣（实心材料）

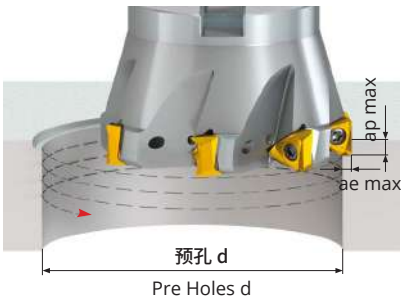
Helix Interpolation Milling (Solid Material)

铣刀切削直径 D Milling Diameter	最小铣削孔径 D min Minimum Milling Diameter	最大铣削孔径 D max Maximum Milling Diameter	最大切深 ap max Maximum Cutting Depth
20	37	40	1.2
22	41	44	1.0
25	47	50	1.0
30	57	60	1.0
32	61	64	1.0
35	67	70	0.9
40	77	80	0.9
50	97	100	0.9
63	123	126	0.9

AHNO 铣刀技术应用

AHNO Milling Technology Application

M2390-TN17



螺旋插补铣（有预孔）

Helix Interpolation Milling (Pre Holes)

铣刀切削直径 Milling Diameter Dc	d min = Dc		d = 1.25*Dc		d = 1.5*Dc		d = 1.75*Dc		d = 2*Dc	
	最大切深 Maximum Cutting Depth	最大切宽 Maximum Cutting Width	最大切深 Maximum Cutting Depth	最大切宽 Maximum Cutting Width	最大切深 Maximum Cutting Depth	最大切宽 Maximum Cutting Width	最大切深 Maximum Cutting Depth	最大切宽 Maximum Cutting Width	最大切深 Maximum Cutting Depth	最大切宽 Maximum Cutting Width
32	0.16	1.5	0.33	2.8	0.44	4.0	0.7	5.0	0.9	6.5
40	0.22	2.0	0.38	3.5	0.55	5.0	0.9	6.5	1.15	8
50	0.27	2.5	0.5	4.5	0.7	6.5	1.0	8.0	1.4	10
63	0.33	3.2	0.6	5.5	0.9	8.0	1.45	10	1.8	12.5
80	0.55	4	1.0	7.0	1.45	10	2.15	13	2.6	16
100	0.7	5	1.2	9.0	1.8	12.5	2.7	16.5	3.3	20
125	0.9	6.5	1.6	11	2.3	15.5	3.1	20	4.1	25
160	1.2	8.0	2.0	14	2.9	20	4.3	26	5.3	32

AHNO 铣刀技术应用

AHNO Milling Technology Application M2390-XO



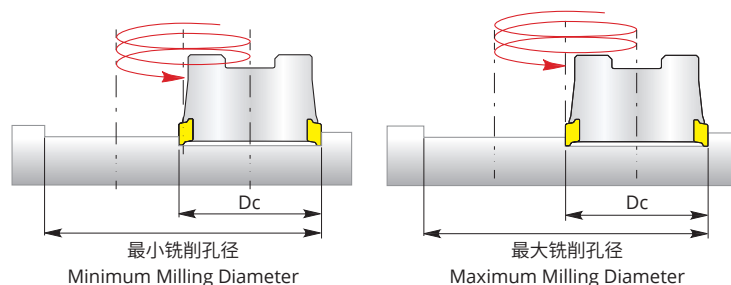
坡铣信息

Ramp Milling Information

铣刀切削直径 Milling Diameter Dc	XO10(R≤1.2)		XO16(R≤2.4)	
	最大坡铣角度 Maximum Ramp Milling Angle	最大坡铣深度 Maximum Ramp Milling Depth	最大坡铣角度 Maximum Ramp Milling Angle	最大坡铣深度 Maximum Ramp Milling Depth
16	11.7°	6		
20	8.3°	6		
25	6.1°	6	12°	15
32	4.4°	6	8°	15
40	3.4°	6	5°	15
50	2.6°	6	4°	15
63			3°	15
80			2°	15
100			1.5°	15
125			1°	15
160			1°	15

AHNO 铣刀技术应用

AHNO Milling Technology Application M2390-XO



螺旋插补铣（实心材料）- XO10 系列

Spiral Interpolation Milling (Solid material) - XO10 Series

铣刀切削直径 Milling Diameter Dc	XO10	XO10-R0.2	XO10-R0.4	XO10-R0.8	XO10-R1.0	XO10-R1.2
	最小铣削孔径 Minimum Milling Diameter	最大铣削孔径 Maximum Milling Diameter				
16	28.4	31.6	31.2	30.4	30	29.6
20	36.4	39.6	39.2	38.4	38	37.6
25	46.4	49.6	49.2	48.4	48	47.6
32	60.4	63.6	63.2	62.4	62	61.6
40	76.4	79.6	79.2	78.4	78	77.6
50	96.4	99.6	99.2	98.4	98	97.6

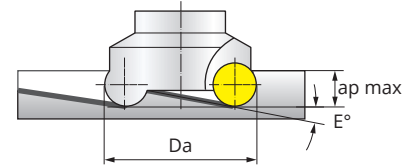
螺旋插补铣（实心材料）- XO16 系列

Spiral Interpolation Milling (Solid material) - XO16 Series

铣刀切削直径 Milling Diameter Dc	XO16	XO16-R0.4	XO16-R0.8	XO16-R1.2	XO16-R1.6	XO16-R2.0
	最小铣削孔径 Minimum Milling Diameter	最大铣削孔径 Maximum Milling Diameter				
25	43.6	49.2	48.4	47.6	46.8	46
32	57.6	63.2	62.4	61.6	60.8	60
40	73.6	79.2	78.4	77.6	76.8	76
50	93.6	99.2	98.4	97.6	96.8	96
63	119.6	125.2	124.4	123.6	122.8	122
80	153.6	159.2	158.4	157.6	156.8	156
100	193.6	199.2	198.4	197.6	196.8	196
125	243.6	249.2	248.4	247.6	246.8	246
160	313.6	319.2	318.4	317.6	316.8	316

AHNO 铣刀技术应用

AHNO Milling Technology Application M1300-RC



坡铣信息

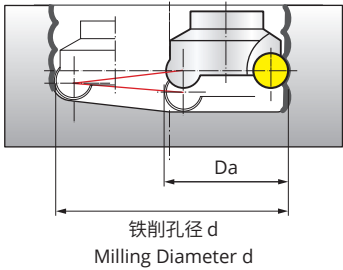
Ramp Milling Information

铣刀切削直径 Milling Diameter D_a	RC10		RC12		RC16		RC20	
	最大坡铣角度 Maximum Ramp Milling Angle	最大坡铣深度 Maximum Ramp Milling Depth	最大坡铣角度 Maximum Ramp Milling Angle	最大坡铣深度 Maximum Ramp Milling Depth	最大坡铣角度 Maximum Ramp Milling Angle	最大坡铣深度 Maximum Ramp Milling Depth	最大坡铣角度 Maximum Ramp Milling Angle	最大坡铣深度 Maximum Ramp Milling Depth
25	13.2°	5.0						
32	12.6°	5.0						
35	12.3°	5.0						
40	9.5°	5.0	9.0°	6.0				
50	6.4°	5.0	7.0°	6.0				
52	6.1°	5.0	6.5°	6.0				
63	4.7°	5.0	5.0°	6.0	7.0°	8.0		
66	4.4°	5.0	4.5°	6.0	6.5°	8.0		
80			3.0°	5.1	5.0°	8.0	7.0°	10
100			2.0°	3.3	4.0°	6.8	5.0°	8.6

AHNO 铣刀技术应用

AHNO Milling Technology Application

M1300-RC



螺旋插补铣（实心材料）

Helix Interpolation Milling (Solid material)

铣刀切削直径 Milling Diameter Da	RC10		RC12		RC16		RC20	
	最小铣削孔径 Minimum Milling Diameter	最大铣削孔径 Maximum Milling Diameter	最小铣削孔径 Minimum Milling Diameter	最大铣削孔径 Maximum Milling Diameter	最小铣削孔径 Minimum Milling Diameter	最大铣削孔径 Maximum Milling Diameter	最小铣削孔径 Minimum Milling Diameter	最大铣削孔径 Maximum Milling Diameter
25	32	50						
32	45	64						
35	51	70						
40	61	80	56	80				
50	81	100	76	100				
52	85	104	80	104				
63	107	126	102	126	94	126		
66	113	132	108	132	100	132		
80			136	160	128	160	120	160
100			176	200	168	200	160	200

阿诺 - Loong 龍系列 - 可转位铣刀附件

AHNO Loong Series-Assembly Parts and Accessories

刀片锁紧螺钉 Insert Clamping Screw

序号 No.	螺钉型号 Screw Type	Torx	紧固扭矩 Fastening Torque	尺寸 Diameter
1	AF9041	7IP	0.8 Nm	M2.5*6.5
2	AF9011	8IP	1.2 Nm	M2.5*7.3
3	AF9051	9IP	2.0 Nm	M3*6
4	AF9021	9IP	2.0 Nm	M3*7.3
5	AF9061	10IP	3.0 Nm	M3.5*9
6	AF9062	15IP	3.0 Nm	M3.5*10
7	AF9052	15	3.0 Nm	M3.5*11
8	AF9012	15IP	3.0 Nm	M4*8.5
9	AF9042	15IP	3.5 Nm	M4*10
10	AF9022	15IP	5.0 Nm	M4.5*11
11	AF9031	20IP	5.0 Nm	M5*13
12	AF9063	20IP	5.0 Nm	M5*14
13	AF9064	25IP	7.5 Nm	M6*15

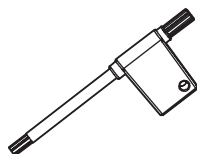
阿诺 - Loong 龍系列 - 可转位铣刀附件

AHNO Loong Series-Assembly Parts and Accessories

阿诺 - Loong 龍系列产品 - 旗形扳手



AHNO Loong Series-Flag Wrench

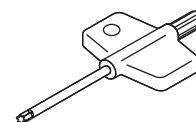


序号 No.	螺丝刀型号 Screwdriver Type	Torx
1	AF8010-T07IP	T07IP
2	AF8010-T08IP	T08IP
3	AF8010-T09IP	T09IP
4	AF8010-T10IP	T10IP
5	AF8010-T15IP	T15IP

阿诺 - Loong 龍系列产品 - 钥匙形扳手



AHNO Loong Series-Key Wrench

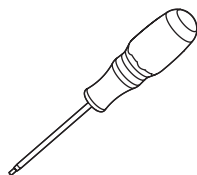


序号 No.	螺丝刀型号 Screwdriver Type	Torx
1	AF8020-T07IP	T07IP
2	AF8020-T08IP	T08IP
3	AF8020-T09IP	T09IP
4	AF8020-T10IP	T10IP
5	AF8020-T15	T15
6	AF8020-T15IP	T15IP
7	AF8020-T20IP	T20IP

阿诺 - Loong 龍系列产品 - 螺丝刀



AHNO Loong Series-Screwdriver

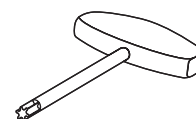


序号 No.	螺丝刀型号 Screwdriver Type	Torx
1	AF8030-T15IP	T15IP
2	AF8030-T20IP	T20IP

阿诺 - Loong 龍系列产品 - T 型扳手



AHNO Loong Series-T-shaped Wrench



序号 No.	螺丝刀型号 Screwdriver Type	Torx
1	AF8040-T25IP	T25IP

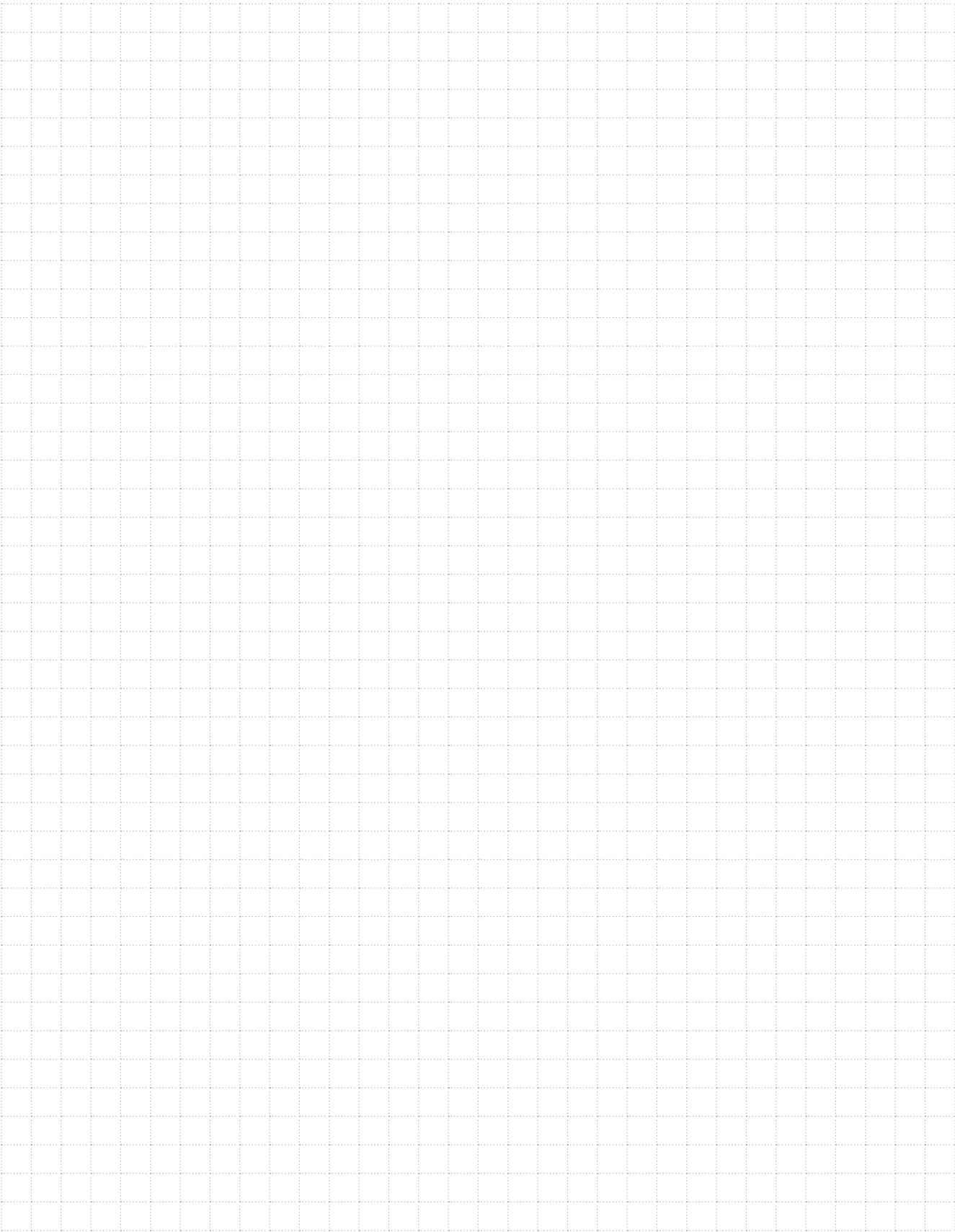
应用信息

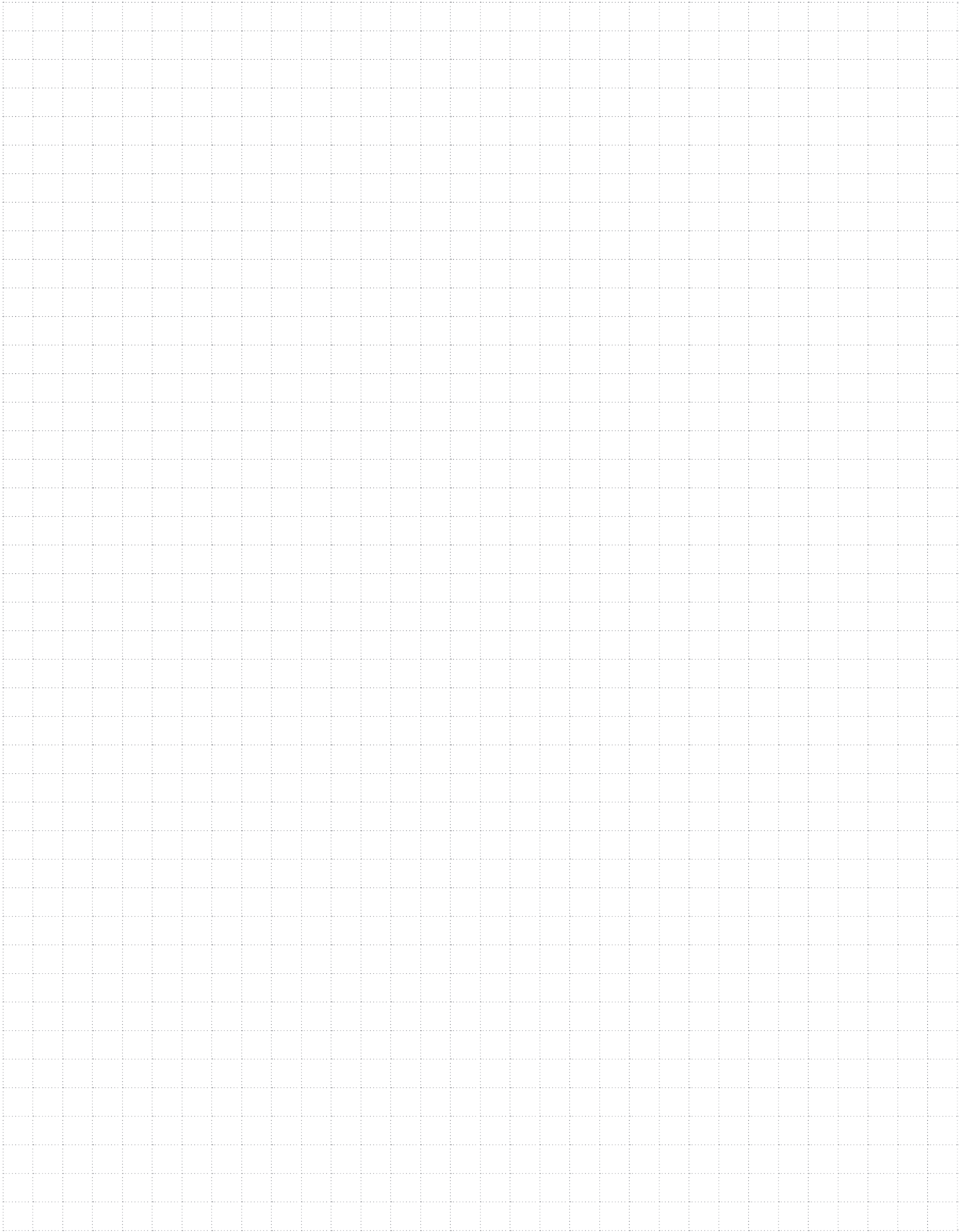
Application Information

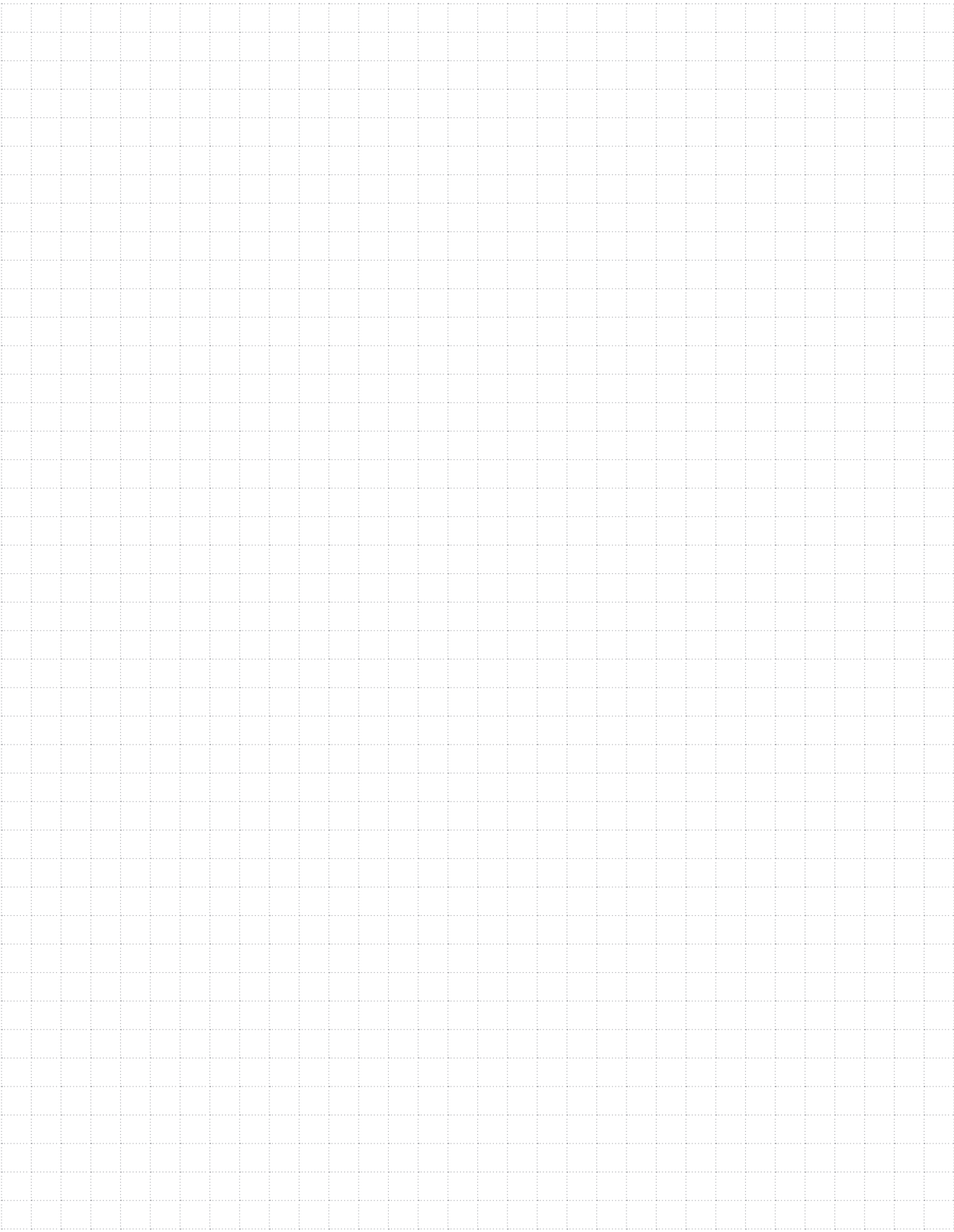
硬度换算对照表

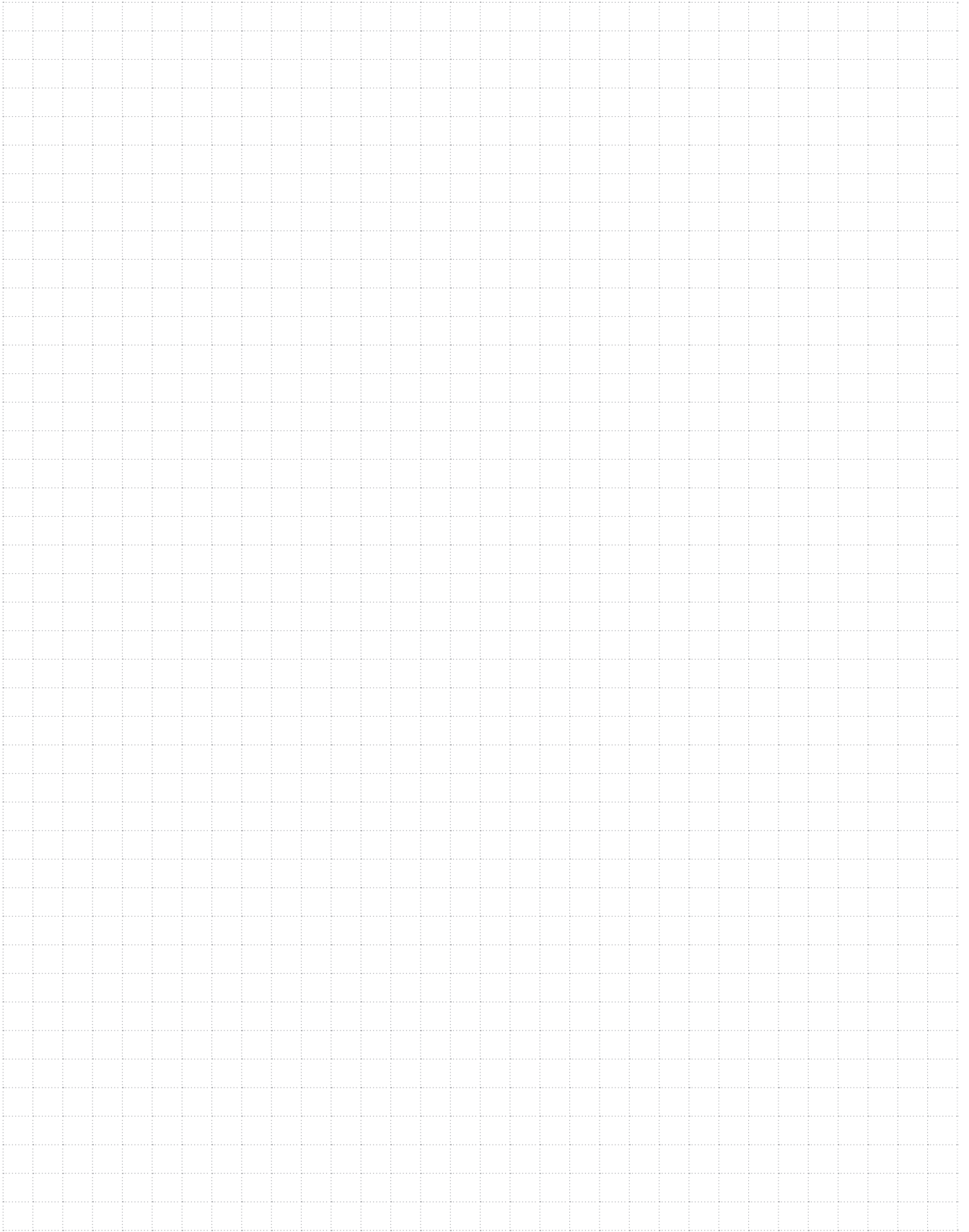
Hardness Conversion Table

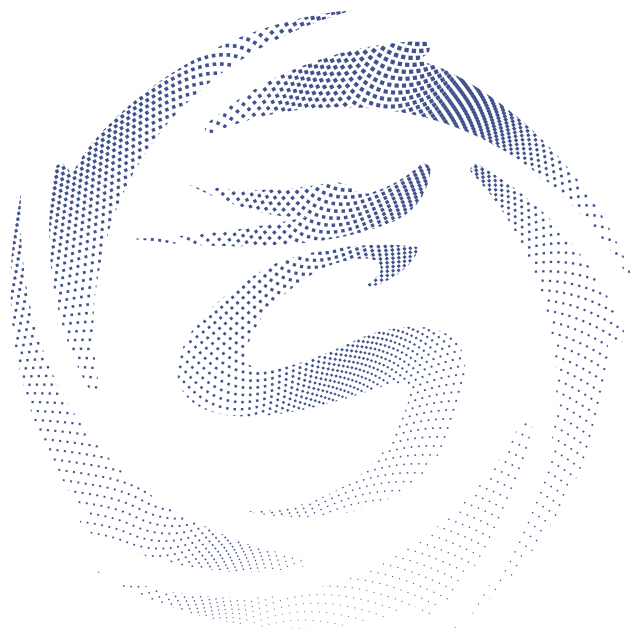
布氏硬度 (HB)	维氏硬度 (HV)	洛氏硬度 (HR)		抗拉强度 Tensile Strength (N/mm ²)
		150kg 金钢石锥 Diamond Cone (HRC)	100kg 钢球 Steel Ball (HRB)	
208	198	-	93	667
212	201	-	94	680
217	206	(16.0)	95	696
220	209	(17.5)	95	706
222	211	(18.7)	96	716
235	223	(19.1)	97	755
242	230	20.2	97	775
248	236	22.1	99	794
257	244	23.1	100	824
262	249	24.1	100	838
266	253	24.8	101	853
272	258	25.7	101	870
275	261	26.4	102	880
277	263	27.0	103	892
291	276	29.1	104	941
302	287	29.9	105	971
308	293	30.9	106	990
315	299	32.1	107	1020
322	306	32.3	107	1035
325	309	32.4	107	1049
338	321	33.6	107	1089
343	326	35.4	108	1118
361	343	36.6	109	1157
369	351	37.6	110	1187
383	364	39.4	-	1236
392	372	40.3	-	1265
408	388	41.7	-	1314
425	404	42.9	-	1363
433	411	43.6	-	1390
441	419	44.6	-	1422
447	425	45.0	-	1447
455	432	45.8	-	1471
470	447	46.9	-	1520
485	461	48.1	-	1569











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